DOCUMENT RESUME

ED 072 243 VT 018 696

AUTHOR	Blackwell, F. W.; And Others
TITLE	Performance Rewards for Services to the Employable Poor: A Proposed Incentive Pay System for California Job Agents.
INSTITUTION	Rand Corp., Santa Monica, Calif.
SPONS AGENCY	California State Dept. of Human Resources Development, Sacramento.
PUB DATE	Jun 72
NOTE	111p.
AVAILABLE FROM	The Rand Corp., 1700 Main Street, Santa Monica, California 90406 (Catalog No. R-1028-HRD, $4.00)
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	Disadvantaged Groups; Employment Counselors; Employment Opportunities; Employment Programs; *Employment Services; Improvement Programs; *Incentive Systems; *Job Placement; *Merit Pay; *Merit Rating Programs; Motivation; State Programs; Unemployed
IDENTIFIERS	*Job Agents

ABSTRACT

This report presents the rationale, methodology, findings, and conclusions of a state-initiated program to assist disadvantaged persons in finding and maintaining stable jobs. Conducted under the direction of the California State Department of Human Resources Development (HRD), this incentive-based system utilizes job agents who are rewarded according to improvements in client's earnings brought about by their services. Further, incentive pay points are received by the job agent at the time clients are placed and again one year after placement. The number of pay points will depend on the extent to which the job agent exceeds the original goals established for the client. In addition to the incentive feature, the system also provides management with the means for making inferential judgements of what attributes successful job agents possess. The methodology used to develop the incentive pay system can be used to evaluate the effectiveness of a variety of manpower programs. (Author/SN)

ED 072243

PERFORMANCE REWARDS FOR SERVICES TO THE EMPLOYABLE POOR: A Proposed Incentive Pay System for California Job Agents

F. W. Blackwell, D. H. Greenberg,
A. J. Lipson, B. D. Rostker, S. T. Wolfberg

VT018696

R-1025-HRD
JUNE 1972

Prepared for the Department of Human Resources Development, State of California

Rand

This report was prepared for the Department of Human Resources Development, State of California, under Contract UI1-7083. Views or conclusions contained in this study should not be interpreted as representing the official opinion of HRD.

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PREFACE

In 1971, the California State Department of Human Resources Development (HRD) asked Rand to assist in the design of a workable incentive pay plan for job agents that could be submitted to the State Personnel Board for approval. This report describes such a plan. The work incorporated into this report was performed under Contract UI1-7083 with HRD.

Since the objective of this effort was to develop a system that could actually be implemented, the design of such a plan has required a close working relationship between Rand and HRD staff and management. The proposed incentive plan combines a basic system developed by Rand with guiding principles based on HRD management decisions. Important examples of such management decisions are that incentive pay should be based upon job placement and improvement in client earnings and should be provided through cash awards.

The incentive pay plan proposed in this report should be useful to those interested in the workability of incentive pay for professional employees of a civil service system. It should also be of interest to those concerned with evaluating the effectiveness of a variety of manpower programs as well as other "case responsible" personnel within the manpower system.

F. W. Blackwell, D. H. Greenberg, and B. D. Rostker are members of the Rand research staff, A. J. Lipson is Director of the Rand Sacramento Project, and S. T. Wolfberg is a Rand consultant.

SUMMARY

The 1968 legislation creating the Department of Human Resources Development (HRD) established the position of job agent. Job agents were to deliver the services necessary to place disadvantaged unemployed clients of HRD into jobs and to secure their success after placement. The legislation mandated that job agents be compensated through an incentive pay system. To fulfill this mandate, HRD turned to Rand for assistance in designing a workable incentive program. Following are the key elements of a plan for implementing the program.

1. The principle upon which the incentive plan is based is that incentive rewards should depend upon improvements in clients' earnings brought about through services provided by job agents. Services that are not job related will not be rewarded under the system. A job agent's incentive pay is based on the total income gain of all his clients. This will allow the job agent to determine for himself the appropriate tradeoff between quantity and quality.

2. The standards or norms against which the performance of job agents are judged are predictions of how long their clients would have been unemployed and what their wages and job stability would have been had they not received services from a job agent. The predictions are based on the employment experiences of a control group consisting of persons who were unemployed in 1968 and met HRD's criteria of disadvantaged clientele but have never seen job agents. In effect, each client is statistically matched with a non-client with similar demographic characteristics and background. This procedure results in lower standards for those clients who are harder to help (for example, clients with a history of severe job instability) than for clients who are easier to treat.

3. The job agent will receive "incentive pay points" at the time the client is placed and one year after placement. The number of pay points received will depend on the extent to which the job agent exceeds the standards or goals established for the client.

4. Incentive rewards for job agents will be on the basis of the total number of pay points accumulated for all clients over a given calendar period and, as specified by HRD, will be provided by cash awards. The following is a "model" plan:

"MODEL" MONTHLY SALARY RATES FOR JOB AGENTS

	Incentive Pay Class	A	B	C	D	E
	Incentive Rank	Bottom fifth	Second fifth	Third fifth	Fourth fifth	Top fifth
Annual Salary Step	Bonus as a Percent of Base Pay	0	5	10	15	20
1		884	928	972	1017	1061
2		928	974	1021	1067	1114
3		972	1016	1061	1105	1149

Under this plan, job agents would be placed in a three step base pay range to meet civil service requirements, but would receive an increasing percentage of their base pay depending upon performance. One advantage of the fixed salary schedule is that the personnel budget for job agents will be limited and, within a reasonable range, predictable. Job agents who fail to receive a single pay point will receive only their base salary. Remaining job agents will compete with one another for incentive pay points and will be ranked in fifths. Those in the top fifth will receive 20 percent of their base pay as an incentive award, while those in the bottom fifth will only receive their base salary. The "model" plan calls for freezing job agent base salaries at their present level and instituting the incentive system beginning July 1972. The 14 job agents who currently earn a base salary greater than the proposed maximum of $972 monthly will receive either their present salary or their earnings under the new schedule, whichever is higher. Thus, no job agent's existing salary will be permitted to fall under the system.

5. The job agent incentive pay system should be tried on a two-year experimental basis. Some problems are inevitable in the development phase and the program should be implemented with a recognition that adjustments will have to be made on the basis of initial experience. Most new incentive systems in private industry are also introduced on a trial basis.

6. To implement the system, valid information will have to be collected on job agent clients. The information collected should be audited to assure accuracy.

The incentive feature of the proposed system is only one of its major benefits. By stipulating a meaningful standard or norm with which performances may be compared, the system provides management and the job agents themselves with a consistent means of evaluating individual performance. Furthermore, it can be used by management to make inferences as to what attributes successful job agents possess, which agents work best with which clients, and which social services are most useful in bringing about client earnings improvements. Perhaps even more important, the methodology used to develop the incentive pay system can be used to evaluate the effectiveness of a variety of manpower programs as well as other "case responsible" personnel within the manpower system. To facilitate such evaluation, we strongly recommend that the State develop a California sample of clients representative of the population served by HRD. Such a sample could be used both to update and improve the incentive pay plan standards and to provide a data file for general program planning and evaluation purposes.

ACKNOWLEDGMENTS

The job agent incentive pay system could not have been developed without the close cooperation of many members of HRD staff and management. We are particularly indebted to Norman Blacher, Garold Raff, Naomi Evans, Sal Cruz, and Dave Davis. We are also indebted to Rand colleagues D. J. Alesch, W. P. Butz, J. Pincus, and A. H. Pascal for their comments on an earlier draft.

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I. INTRODUCTION

The Human Resources Development Act of 1968 created a class of civil servants known as "job agents" who are responsible for delivering the services necessary to place disadvantaged unemployed clients of the California Department of Human Resources Development (HRD) into jobs and to secure their success after placement. An important and unique provision of this legislation specified that job agents be paid under an incentive pay plan. To fulfill this legislative mandate HRD turned to The Rand Corporation for assistance in designing a workable incentive pay system that could be submitted to the State Personnel Board for approval.

Rand's charge was not to evaluate whether or not an incentive pay plan should be implemented, but rather to design the best plan possible at this time and one that could be quickly put into operation. Incentive pay was to be through cash awards based upon job placement and improved earnings over time. Since the objective of this effort was to develop a system that could actually be implemented, the design of such a plan has required a close working relationship between Rand and HRD staff and management. The proposed incentive plan described in this report combines a basic system developed by Rand with HRD management guidance on how the system is to be implemented.

In developing an incentive pay plan for job agents, Rand examined the usefulness of data sources at HRD and elsewhere as tools for design and implementation of the plan, held numerous interviews with job agents and their supervisors, and spent considerable time working with HRD management and staff to assure that those who would have responsibility for implementation of the plan participated in its development and understood its implications. The incentive pay plan proposed in this report is unique. To our knowledge, no similar incentive system is in operation in California State government, or for that matter in any other state. Thus, the implications of this plan reach beyond the activities of job agents and raise important issues regarding the workability of incentive pay within a civil service system.

Section II discusses the background of the job agent program, with particular emphasis on the legislative provision for incentive pay. Section III briefly examines the past uses of incentive pay systems, with particular reference to the civil service. Section IV examines the specifics of the proposed incentive pay system. It reviews the process by which performance standards were developed as well as translated into actual money payments within the framework of the civil service system. Some of the advantages and disadvantages of incentive pay for job agents are also pointed out. Section V describes the incentive program reporting system. Brief concluding remarks appear in Section VI.

The report also includes four technical appendixes. Appendix A is a technical discussion of the econometric model used to develop the standards. Appendix B contains the report forms and instructions for submitting the information required by the proposed incentive system. Appendix C contains the computer program and data processing instructions necessary to implement the incentive pay system. Appendix D discusses construction of a new pay schedule for job agents that is consistent with the incentive plan.

II. THE JOB AGENT PROGRAM

BACKGROUND

In 1968, California Assembly Bill No. 1463 created the Department of Human Resources Development. The major intentions of the legislation were the development of a comprehensive manpower agency at the state level, the consolidation of federal and state manpower resources, and the redirection of these resources toward improved services for the disadvantaged.[1] To help attain these objectives, the legislation established a new class of civil servants. Known as job agents, these workers were to "develop individualized placement plans leading to continued self-sufficient employment for eligible clients with the most difficult problems of unemployment." Job agents were charged to develop "innovative, new and original ways of achieving continued employment for clients."[2]

In concept, the job agent was supposed to be a cross between a "street hustler," a rehabilitation counselor, and a consummate bureaucrat. The legislation specifically provides that "job agents shall be selected for their ability to understand and work with persons to be served in the program." It was clear that the job agent was not intended to be a traditional employment service job counselor.

To attract the type of personnel consistent with legislative intent, the job agent pay scale was established at a level higher than that of most other state social service personnel.[3] In addition, HRD proposed an "open competitive" examination as the means for selecting job agents, which would have allowed all job agents to be recruited from outside the civil service. After opposition by

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[1] One of the authors of this report, Albert Lipson, played a major staff role in designing the "job package" legislation when he was employed by the California State Legislature and can speak with some authority on legislative intent.

[2] California State Personnel Board Examination Notice, "Job Agents," August 26, 1969.

[3] The initial pay range was $842 per month to $1023 per month; at present it is $884 to $1074.

the California State Employees' Association, a compromise was made permitting half of the first 140 job agents to be selected from outside the state civil service on the basis of an oral examination. It was also decided that in selecting these persons, relevant experience would be weighted more heavily than formal education. The remaining job agents were selected on a promotional basis from within state service. As a result of this selection process, minority groups are well represented among job agents: more than two of every five job agents in 1971 were blacks and almost one of five was a Mexican-American; only one-third were white.[1]

JOB AGENTS AND INCENTIVE PAY

Not only were job agents unique in that they were to be chosen for their ability to work with the hard-core unemployed and the disadvantaged, but it was mandated by the State legislature that they should be paid on an incentive pay basis. Accordingly, Assembly Bill No. 1463 states:

> At such times as job performance standards have been developed and performance measurement is feasible, the director [of the Department of Human Resources Development] shall recommend to the State Personnel Board the establishment of a form of compensation for agents . . . based primarily on the job agent's achievements in obtaining successful completion of training and employment goals by eligible persons.[2]

It seems clear from the language of the Statute defining the functions of the job agent and incentive pay that the legislature intended that job agents be paid in a manner different from prevailing practices, based primarily on measured performance in achievement of employment goals.[3] In our view, the legislature's purpose

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[1]Paper by James W. Connor, Assistant Deputy Director, Department of Human Resources Development, presented to the National Conference on State and Local Manpower Policy Planning on April 29, 1971, Salt Lake City, Utah.

[2]California Assembly Bill No. 1463, Article 3, Section 9701, p. 10.

[3]Although the original intent of the legislation appears to be an incentive system that would result in cash payments to individual

was to use performance rewards to encourage job agents to utilize all resources at their disposal to place and keep disadvantaged clients in meaningful jobs.

Although the incentive pay plan was mandated in 1968, no effort has been made to implement incentive pay, primarily because adequate job performance standards or measures were not developed. A study of incentive compensation for job agents concluded that such a plan was too difficult to administer and would most likely be opposed by job agents.[1] This report addresses these difficulties.

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job agents, we nevertheless explored the possibility of using incentive rewards as case service funds. A difficulty with this approach is that if case service funds really do increase a job agent's productivity, the system tends to be self-perpetuating. Those job agents who are most successful will get most of the case service funds, which they will use to become even more superior, thereby receiving an even larger share of the case funds, and so on. In any event, HRD management specified throughout that the incentive system was to be based on cash awards.

[1]Ernst and Ernst, "An Incentive Pay Plan for Job Agents," August 17, 1970 (unpublished).

III. PAST USES OF INCENTIVE SYSTEMS

Wage incentive systems of one kind or another have been used for at least the last few centuries. For example, the beginnings of the piece rate system in this country can be traced to the colonial period when housewives produced textiles or garments in their homes and were paid by small-scale entrepreneurs on the basis of the quantity produced. More contemporary modes of incentive pay, however, are associated with the development of scientific management and work measurement techniques around the turn of the century. Since that period, and particularly since the end of World War II, incentive pay has come into widespread use throughout the private sector of the economy. Basically, wage incentive plans have been used in conjunction with work measurement programs as an additional means of motivating employees to attain higher performance levels. For the most part, standards are developed using various techniques ranging from qualified judgment, historical data, engineered work measurements, and statistical analysis. Most often, incentive pay plans have been one of the benefits of work measurement programs, installed as a management tool. As such, an incentive pay plan and its accompanying work measurement system are basic techniques for management information and control. Incentive pay systems not only encourage employees to do their best, but they provide management with information needed to evaluate job and program performance and make appropriate management decisions.

However, incentive systems are rarely found within the civil service. We could not, in fact, find a single example of white collar, civil service employees at any level of government who are working under an incentive pay plan. One reason might be the difficulty of defining and measuring the output of government workers, particularly those in professional jobs. Nevertheless, the use of work measurement methods -- tools specifically designed to establish standards of output for labor -- is prevalent in all branches of civil service with well-defined, repetitive jobs. In the California state government, for example, work measurement programs are used by management to

monitor the performance of employees of the Department of Motor Vehicles, the Division of Highways, and the Franchise Tax Board.

In the private sector, the establishment of work measurement programs has frequently been followed by the implementation of wage incentive pay plans. One possible reason this has not occurred within the civil service system where work measurement programs are operating is that the civil service wage structure has traditionally required that persons within a given job classification, who have the same number of years of experience, be paid the same salary. Conversely, wage incentive plans require that persons within the same job classification with different performances be paid different salaries. In any event, one of the more difficult potential obstacles to an incentive system within the government sector is its incompatibility with civil service regulations. We have attempted to overcome such obstacles in developing an incentive system for job agents. Assuming that it can be made consistent with the civil service salary structure, there is no real reason why incentive pay within the government sector is not feasible.

Although the application of incentive pay to civil servants may be unique, its application to professional workers is not. In fact, the group of workers within the private sector whose jobs are most analogous to that of HRD counselors -- job counselors at private employment agencies -- have long been paid on a commission basis. There is, however, a critical distinction between the objectives of private employment agencies and those of the job agent program. It little matters who the private agency counselor puts into a particular job. Job agents, however, are required by law to work with the disadvantaged. Thus, the private agency counselor's reward depends only on how good the jobs are he finds for his clients, whereas incentive rewards for job agents must depend not only on the quality of the job into which they place these clients but on how difficult their clients are to place and on how well their clients succeed once they are placed. If the stress were only on good placement, the effect of incentive pay would be to encourage job agents to concentrate their efforts on their least disadvantaged, easiest to place clients to the neglect of clients who are harder to place.

IV. BASIC ELEMENTS OF THE INCENTIVE PAY SYSTEM

ESTABLISHING PERFORMANCE STANDARDS

The principle upon which the proposed incentive pay system is based is that the incentive reward should be made for demonstrated improvements in clients' earnings ascribed to services provided by the job agent. In effect, the job agent is paid a bonus on improvements in his client's earnings. A job agent may increase a client's earnings in a number of ways: (1) his efforts can result in reducing the period the client is unemployed to less than it would have been had he not seen a job agent, (2) he may be responsible for increasing the client's post-placement wage, or (3) he may be responsible for raising the client's job stability above what it would have been in the absence of the job agent's efforts. Thus, the standard against which the performance of job agents is judged is predictions of how long their clients would have been unemployed and what the clients' wages and job stability would have been had they not received the services of a job agent.

Although there is obviously no direct way of observing what would have happened to a particular client had he not seen a job agent, it is possible to infer what would have happened by observing the length of unemployment and post-placement wages and job stability of a group of people who did not receive job agent services but who are similar to job agent clients -- that is, a control group.

The use of a control group is a standard procedure in the evaluation of manpower programs. In general, establishment of a control group is a costly and complicated procedure. Furthermore, establishing a control group especially to measure the performance of job agents would delay implementation of an incentive system until a lengthy follow-up period was completed. As a result, it was determined that the control group for the job agent program would have to come from an existing data source. Accordingly, several such data sources were examined, including the Bureau of the Census' Current Population Survey; the Management Services Company's Employment Rating System 1010 Sample;

HRD's Special Applicant History File; and the Income Dynamics Panel (IDP), a sample survey conducted by the University of Michigan's Survey Research Center. The IDP was chosen because it is the only source of data with all the information necessary for the development of client performance standards. The IDP survey provides longitudinal information about the economic status, behavior, and attitudes of individuals and their families in 1968, 1969, and again in 1970. The sample consists of a representative cross-section of the United States, as well as a supplemental sample of families known to have low incomes. Although it is not necessary for the control group to match job agent clients exactly on a one-to-one basis, they must be roughly similar. Since job agent clients are generally unemployed and disadvantaged, a comparable subsample of IDP members was obtained. The subsample consisted of individuals who were unemployed in 1968 and were classified on the basis of HRD standards as being "disadvantaged."

By observing the actual employment experiences of members of the IDP control group, the expected behavior of similar job agent clients can be inferred. This requires a model of the economic behavior of the unemployed and the use of appropriate statistical techniques to estimate the model. Appendix A provides details of the economic model and statistical techniques used. In brief, the standard statistical tool of regression analysis was used to "explain" differences or variation among members of the control group in their observed duration of unemployment, days worked in the year following placement, and post-placement wage rate. The variation was traced to differences in demographic characteristics and work experience among members of the control group. The regression analysis produced algebraic equations that, in effect, permit a job agent client to be statistically matched with a non-client with the same demographic characteristics and the same pre-employment job history. The equations will allow HRD to predict what a person with a given set of characteristics could expect in terms of duration of unemployment and post-placement wage rate and job stability, if he had not seen the job agent. These projections then become the standards, or minimum goals, upon which to judge the performance of job agents. The job agent's incentive reward will depend on the extent to which he exceeds these minimum goals.

It is useful to examine the effect that some of the demographic factors considered in the analysis have on the projections of expected client behavior in the absence of job agents, and thus on the minimum performance goals for job agents. For example, regression analysis of the control group indicated that disadvantaged persons who live in a rural environment can expect to have 25 more days of unemployment, and to work 27 less days for 6¢ less per hour, during the post-placement year than persons who are similar in all ways, except that they live in an urban area.[1] The minimum goals a job agent must exceed to receive an incentive reward would be higher for a client who came from an urban area than for a client from a rural area. Similarly, the standard would reflect the fact that people with physical handicaps are expected to receive a lower wage (80¢ per hour) but work longer (11 days) during the post-placement year than otherwise similar non-handicapped persons. The estimates also indicate, and the standards reflect, that during the post-placement year the following factors are significantly associated with a longer expected period of work: being married, being a female, being white, being a veteran, not having been on welfare, and finding a job in a blue collar occupation. The following factors show significant positive relationships with a high post-placement wage rate: having some vocational training, not having been on welfare, belonging to a labor union, and having previous work experience in a blue collar occupation.

These findings indicate how various factors -- such as race, health, experience, and geographic location -- will affect the performance standard for each client. As was indicated, the standard is different for different clients. Based on the individual characteristics of each client, the standard establishes client goals for the job agent and provides the necessary basis for calculating a client's income gain and, hence, the job agent's incentive reward. Consider, for example, two clients with exactly the same characteristics and thus the same minimum goals. Let us assume the goals indicate that without a job

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[1] Estimates are based on the reduced form estimates presented in Table A-3.

agent both clients could expect to be unemployed 40 days, to find jobs that pay $2.00 per hour, and to be employed 200 days during the post-placement year. That means that in the absence of a job agent both clients could expect to earn about $3,200 during the period beginning with their first day of unemployment and ending one year after they find jobs. Now assume that after 40 days of unemployment and after receiving services from a job agent, the two clients are placed and earn $2.25 and $2.50 per hour, respectively, for 200 days of work. Clearly, the income gain for the second client is $400 more than that for the first. Thus, the incentive reward for working with the second client also would be greater.

Now consider two clients with different standards or minimum goals: a relatively hard-to-place client with a minimum earnings goal of $3,500 and a somewhat easier client with an earnings goal of $4,500. Both clients receive services from job agents and in both cases the job agents are able to reduce their actual level of unemployment below the standard and to increase their wage rate and days worked during the post-placement period above the standard. Assume that as a result of the services provided, both clients' actual incomes were $5,500. Although the earnings of both clients were improved above the goal, the hard-to-place client had a gain of $2,000 compared with only a $1,000 gain for the easier client. As a result, the job agent who served the more difficult client would receive a larger incentive payment.

SOME CAVEATS

The calculation of goals for each client is predicated upon statistical projections that utilize a sample drawn from the Income Dynamics Panel. Since information was not obtained during the survey on every human characteristic that might influence a person's length of unemployment or his post-placement wage rate or job stability, some factors may have been left out of the analysis. For example, the IDP data base did not contain usable information about such problems as narcotic or alcohol addiction. Therefore, it is possible that the projected economic behavior of an addict in the absence of

a job agent may not be entirely accurate. However, the fact that addiction is not explicitly examined may not be that important, for the previous work history of an addict is probably quite different from that of a non-addict. Since the previous work history of the control group was explicitly examined and was found to be instrumental in predicting the duration of unemployment and post-placement wage and job stability, it probably serves as a proxy for factors that are not explicitly addressed in the analysis.

Nevertheless, because some factors were undoubtedly left out of the analysis and because of random differences in the economic experience of the unemployed, earnings in the absence of a job agent will not be precisely predicted for every individual job agent client. On the average, however, individual errors of this type should tend to offset one another. Thus, although incentive rewards will be too high for some clients and too low for others, over time, over-and-under payments received by a particular job agent should tend to net out.

Another factor that needs consideration is differences in local labor market conditions and in the availability of client resources at various HRD Centers. Unfortunately, there is no way at present to build an adjustment for these factors into the standards. However, it will be possible to do so after the incentive system has been in operation for about a year. It is a simple matter, for example, to determine whether there is a statistically significant relation between client income gains as measured under the incentive system, and local labor market conditions or the availability of client resources. If a statistical relation does exist, a simple adjustment factor or weight can be calculated that will compensate for these factors. Such an adjustment would help to insure that a job agent's incentive payment would be based upon his relative success in servicing clients -- not upon factors beyond his control.[1]

Further possible limitations of the data base are that it is not California-specific and that it is slightly dated; it consists of a

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[1]This and related adjustment procedures are discussed in somewhat more detail in Appendix A.

national sample of persons who were unemployed in 1968.[1] We do not believe that California is so different from the rest of the nation nor that economic conditions have so changed for the disadvantaged that this presents a serious problem. Furthermore, as new data for the 1971 and 1972 period are added to the IDP, the basic regression equations can be re-estimated.[2] In any event, the IDP appears to be the best data now available. Nevertheless, it would obviously be preferable to have an up-to-date, all-California data source that would more closely represent the population serviced by job agents and other HRD personnel services, and from which all relevant information could be obtained. Since these data could be used by the state for many purposes in addition to establishing standards for job agents -- for example, to compare the relative effectiveness of various manpower services provided by the state -- its costs would be shared by many programs. At present the state has no way of continuously evaluating and comparing its numerous training, employment, and welfare services, except on an ad hoc basis. Accordingly, we strongly recomment that the state attempt to establish such a data file.

TRANSLATING CLIENT INCOME GAINS INTO INCENTIVE REWARDS

The job agent who exceeds the standards or goals established for a particular client will be eligible for an interim incentive payment at the time the client is placed and for a second and final incentive payment one year after placement. The interim payment will be based on the extent to which the job agent has reduced the client's length of unemployment below the standard or secured an initial post-placement wage rate above the standard. The final incentive payment will depend on these factors plus the client's actual earnings in the year following placement relative to the standard. For the purpose of computing incentive rewards, the interim and final evaluation of job agent services

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[1] In computing client goals, account was taken of increases in wage levels that have taken place since 1968. These adjustments are described in Appendix A.

[2] There are no plans, at present, to continue the IDP Survey beyond 1972.

will be made in terms of "payment points." A description of the method used to calculate payment points appears in Section V. What is important at present is to describe how payment points are translated into cash incentive rewards.

Incentive rewards for job agents will be on the basis of the total number of payment points accumulated for all clients over a given calendar period. During the first year of the program, this accounting period will be six months in length. Thereafter, the incentive system accounting period will be a calendar quarter. Each job agent who earns positive pay points will receive a check at the end of the accounting period.[1]

Ideally, job agents should be able to compete on the basis of their performance, without a maximum salary limitation. However, to conform to present civil service procedures, it was necessary to design a system based on fixed incentive pay classes. To install this system, a new monthly pay schedule for job agents will be introduced. An advantage of the fixed pay schedule is that the personnel budget for job agents will be limited and within reasonable bounds, predictable. A "model" of this schedule, which was worked out with members of the HRD staff, appears in Table 1.[2] To implement this new schedule the base salary currently received by job agents will be frozen for one year.

The salary schedule reduces the number of annual salary step increases from five to three, the minimum required under state civil service regulations. During each of his first two years as a job agent, an individual will compete under the incentive pay system and, in addition, may be eligible for a five percent salary step increase. Thereafter, any increase will result solely from his performance under the incentive system or from general salary increases for state employees.[3]

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[1]It may also be useful to issue monthly pay point tally sheets, so that individual job agents can chart their progress relative to other job agents throughout the accounting period.

[2]Principles that governed the development of the proposed pay schedule are discussed in Appendix D.

[3]Operationally, salary step increases have become virtually automatic throughout the California Civil Service System. Technically,

Table 1

TENTATIVE NEW MONTHLY SALARY RATES FOR JOB AGENTS

	Incentive Pay Class	A	B	C	D	E
	Incentive Rank	Bottom fifth	Second fifth	Third fifth	Fourth fifth	Top fifth
Annual Salary Step	Bonus as a Percent of Base Pay	0	5	10	15	20
1		884	928	972	1017	1061
2		928	974	1021	1067	1114
3		972	1016	1061	1105	1149

Job agents will compete under the incentive pay system in the following manner. Agents who fail to obtain a single positive point will be placed into pay class A according to their annual salary step and will receive only their base salary. The remaining job agents will be ranked according to the number of pay points they accumulated in the period and will be placed into one of five equal size classes. The bottom fifth will be placed into pay class A and will not receive an incentive bonus. The top fifth of job agents who receive positive points will qualify for pay class E and will receive an incentive pay bonus equal to 20 percent of their base salary. Other job agents will be placed into pay classes B, C, or D and will receive incentive payments equal to 5, 10, and 15 percent of their base salary, respectively.

A job agent's incentive pay is based on the total income gain of all his clients. This will allow the job agent to determine for himself the appropriate tradeoff between quantity and quality. Other things equal, a job agent with a relatively larger case load will be able to obtain a larger incentive payment. However, if the case load becomes so large that the quality of services to individual clients

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however, they are supposed to be based on merit. Once HRD gains some operational experience with the incentive system, it should be feasible to make step increases for job agents also contingent upon performance under the system.

substantially suffers, incentive payments will decrease. Thus, the system encourages both quality and quantity.

During the first year there is likely to be some problem in the transition from the present pay schedule to the new incentive pay schedule. It is suggested that job agents *not* receive the general salary increase proposed for July 1972. It should be noted, however, that most job agents -- those in pay classes B, C, D, or E -- will at least receive the amount of this year's cost-of-living increase for state employees. After the transition year, the schedule for job agents, like that of other state employees, can be allowed to reflect any general salary increases.

A few job agents are already earning a base salary greater than the proposed maximum of $972 per month. These agents will receive either their present salary or their earnings under the new schedule, whichever is higher. Thus, *no job agent's salary will fall as a result of the implementation of the incentive plan.* And since the maximum that can be earned under the plan -- $1,149 per month -- is seven percen thigher than any job agent now earns, all job agents will be able to compete for incentive payments. Moreover, in the future, state-wide general salary increases will raise the maximum base pay until it equals the pay of the 14 job agents currently earning more than $972 per month. At that time all job agents will be competing on the same basis for a maximum incentive payment of 20 percent of base salary.

INTRODUCING THE INCENTIVE SYSTEM

The incentive pay system described in this report is tentatively scheduled to be implemented on a two year, state-wide, trial basis on July 1, 1972. The system will be evaluated after the first year; and based on the information that will then be available, new minimum performance standards will be developed for job agents. The minimum standard will be in terms of the minimum number of pay points a job agent will be expected to accumulate during an incentive system accounting period. Job agents will be required to meet this minimum standard before being eligible to receive incentive rewards. Until

these new standards are established, the top 80 percent of those job agents who earn pay points during an accounting period will be eligible for an incentive reward.

Incentive rewards will be based on persons who become job agent clients after the introduction of the program and on unemployed clients in job agent case loads at the time the program is initiated. This means that initial input information must be collected on the existing case load of clients not yet placed. This should provide a large number of clients for immediate inclusion under the incentive plan and result in rapid implementation of the system. It should also insure that job agents work as hard with their existing case loads as with new clients.

IMPLICATIONS FOR JOB AGENTS OF AN INCENTIVE SYSTEM

As noted earlier, a requirement that job agents be paid under an incentive system is mandated by the legislation that created the job agent program. It should be emphasized that although an incentive pay system is one of several means of motivating employees to higher performance levels, it does not eliminate the need for supervision. It is not an automatic controlling device, but only a tool to assist management in doing a better job.

The incentive feature of the proposed pay system is only one of its major benefits. At the present time, for example, there is no criterion for measuring job agent performance except the subjective judgment of each job agent's immediate supervisor. By stipulating a meaningful standard or norm with which performance may be compared, an incentive system provides management at all levels with a consistent means of evaluating the performance of individual job agents. Furthermore, it can be used by management to make inferences as to what attributes successful job agents possess, which agents work best with which clients, and which social services are most useful in bringing about client earnings improvements. Similarly, the incentive system equips the job agent with a yardstick he can use to recognize what management expects of him and to measure how well he is responding to these expectations.

However, the very fact that an incentive system does establish definite performance standards appears likely to cause many job agents to resist it.[1] For although the standards we have developed are consistent with our interpretation of management and the legislature's goals for the job agent program, these goals are not entirely compatible with those of many job agents. Management and the legislature appear to view the goals of the program as relatively specific: to place and to keep disadvantaged HRD clients in meaningful employment. Many job agents, however, seem to interpret the goals of the program much more broadly: to provide any services -- not merely those that are directly job related -- they feel are of potential benefit to the disadvantaged community. This is not the place to evaluate these two approaches; each has its relative merits. For present purposes it is important to recognize that the implementation of the incentive plan described in this report will discourage job agents from performing services that are not related to employment.

Another objection of many job agents to an incentive system is that it will cause inequities among job agents. It is argued, for example, that those with clients who are relatively easy to place will receive larger rewards than those with more difficult clients. A related objection is that an incentive system will cause "creaming"; that is, it will tempt job agents to concentrate on clients who are relatively easy to place. The most obvious inequalities and examples of creaming can, of course, be eliminated through supervision. More important, however, is the fact that the proposed incentive system itself has been designed to minimize both creaming and inequalities between job agents by allowing the performance standards upon which the incentive system is based to adjust to account for the characteristics of each client. As has been seen, more is expected of a job agent working with an easy client than of one working with a difficult client. Although it must be admitted that the adjustment procedure will not work perfectly and that some inequalities and creaming will

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[1] There is considerable evidence that most job agents are very much opposed to an incentive system. See, for example, the results of a survey of job agent attitudes in Ernst and Ernst, *op. cit.*

undoubtedly occur, it should also be noted that some inequalities and creaming occur under the present system. A hard working, productive job agent, for example, currently receives the same salary as his less motivated, less skilled colleague. Furthermore, it can be argued that HRD is not the appropriate agency to treat the problems of those who have little chance, at least within the foreseeable future, of being placed in a job. If so, a certain amount of creaming may be warranted.

Many job agents also feel that their effectiveness is highly contingent upon the cooperation of other persons at their HRD Center and that since an incentive system produces competition (non-cooperation), it will cause a reduction in productivity. Although the potential severity of this problem is unknown, it seems likely that there is some validity to the argument. To the extent the problem does exist, it must be overcome through adequate supervision.[1] For example, if a job agent needs a certain number of training slots to serve his clients sufficiently, the supervisor at his HRD Center should ensure that within feasible limits an appropriate number of slots are made available.

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[1]Rand suggested that another partial solution to this problem might be to pool all the incentive rewards accrued at a given Center and then distribute them through some sort of sharing system. The nature of the sharing system could differ between Centers and be determined by a vote of each Center's job agents. Each job agent, for example, could share equally in the pool, with fractional shares perhaps being granted to other Center employees who work with job agents. HRD management decided against this approach, partly because it would be very difficult to administer.

V. THE INFORMATION SYSTEM

INTAKE AND FOLLOW-UP INFORMATION

In order to calculate a job agent's incentive reward, client information must be collected at three points in time: when an individual first becomes a job agent client, when he is first placed in a job, and one year after initial placement. A copy of the initial intake form appears in Appendix B, along with detailed instructions on how the forms are to be completed. Copies of the two follow-up forms appear in Appendix C. The accuracy of all three forms will be subject to audit.

The first intake form consists of information about the client, including his personal characteristics and prior employment experiences. This form will be completed when the client officially becomes part of the job agent's caseload. Whenever feasible, this form should be completed by someone other than the job agent himself, such as an intake clerk. This should help to minimize the possibility of fraudulent information being submitted. However, the job agent must complete the remaining two forms, since only he will possess the necessary follow-up information. The second form will be completed at the time of placement and will pertain to the date of placement, the job's starting wage rate, and the time during which the client was in a training program or in a short-run, temporary job. The third form will be completed one year after the client was first placed and will pertain to the client's earnings over the preceding year. Note that this requires the job agent to keep track of his client well after the client is initially placed. This, however, is consistent with the 18-month follow-up required by AB-1463.

Although initial intake information must be collected on *all* clients, follow-up information need *not* be. The reasons for this are essentially pragmatic. An incentive system that utilizes input data collected on all clients would provide the comprehensive data necessary for a full evaluation of individual job agents and HRD Centers. Unfortunately, the goal of complete information on every client is one that probably cannot be obtained without a considerable expenditure

of funds. This conclusion is based on an evaluation of HRD's existing information system and discussions with numerous job agents. Furthermore, the job agents must provide the follow-up information, and they will have little desire to do so if as a result their incentive rewards are reduced.

As a practical alternative, job agents will be allowed to select the clients on whom to turn in the necessary follow-up information. Presumably, these will be clients on whom the job agents feel they are likely to have earned a positive incentive reward. Incentive payments will be based only on clients for whom the measured effects of job agent services are positive; negative situations will simply be disregarded. However, job agents will not be rewarded for services to a client unless all necessary input information on the client is completed. Besides being realistic, this approach has the advantage of minimizing necessary paper work and auditing. In addition, by making incentive rewards contingent upon the completion of essential input information, it imposes considerable discipline upon the information system necessary to support the incentive pay plan.

The necessity of adding new forms to the myriad already required of HRD employees is unfortunate. The decision to design new forms to collect the information necessary to support the job agent incentive system was made after a careful investigation indicated that the forms HRD field personnel now must submit on job agent clients are inadequate for the purpose. Not all the information necessary for the incentive system is collected. And some of the necessary information that is collected is divided among several forms, making its processing for incentive system purposes unwieldy. We have designed the forms to make their completion and processing as simple as possible. More important, however, is that job agents and their supervisors receive practically no useful feedback information from the forms they currently complete,[1] but they will from the new forms required under the incentive system.

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[1]It may in fact be reasonable to consider eliminating several of these forms.

FEEDBACK INFORMATION

For each form submitted on a client, the job agent and his supervisor will receive a feedback report in return. The sequencing of the three forms and the corresponding feedback reports is indicated in Table 2. The information appearing in each feedback report will be calculated by electronic computer on the basis of information collected on the preceding form and the report itself will be in the form of a computer printout. The computer program and the supporting documentation necessary for these computations appear in Appendix C.

Table 2

INFORMATION FLOW FOR EACH JOB AGENT CLIENT

Event	Job Agent or Intake Clerk Submits	Job Agent and Supervisor Receive as Feedback
Client assigned to job agent	Intake form[a]	Initial goals report
Placement	Initial goals report with placement information added[b]	Interim report
One year after placement	Interim report with year's earnings added, together with current employer and client address[b]	Final report

[a]A copy of this form appears in Appendix B.

[b]A copy of this form appears in Appendix C.

[c]These three reports are illustrated in Exhibits 1-3.

Copies of the feedback reports, complete with illustrative calculations, appear in Exhibits 1, 2, and 3. The first report (Exhibit 1) indicates the standards or goals the job agent must exceed if he is to receive an incentive reward. These goals differ somewhat if the client is placed in a blue collar occupation than if he is not. As emphasized earlier, a job agent's success in improving his clients' earnings and,

INITIAL GOALS REPORT

1.	CLIENT	J DOE	4.	FIELD OFFICE NO.	1234
2.	SSA NO.	123-45-6789	5.	JOB AGENT NO.	56
3.	DATE ASSIGNED TO JOB AGENT	10-17-72	6.	REPORT DATE	10-25-72

CLIENT CHARACTERISTICS

7.	1	MALE	20.	26	AGE
8.	1	MARRIED	21.	7	FAMILY SIZE
9.	0	VETERAN	22.	1	NUMBER OF CARS IN FAMILY
10.	0	VOCATIONAL TRAINING	23.	35	DAYS UNEMPLOYED LAST YEAR
11.	0	PHYSICALLY HANDICAPPED	24.	200	DAYS WORKED LAST YEAR
12.	1	WELFARE	25.	1.95	HOURLY WAGE LAST JOB
13.	1	HIGH SCHOOL DROPOUT	26.	3120	TOTAL INCOME LAST YEAR
14.	0	LABOR UNION			
15.	1	BLUE COLLAR LAST JOB			
16.	0	RURAL AREA			
17.	0	RECENT LONG-TERM UNEMPLOYMENT			
18.	0	SPANISH SURNAME			
19.	0	WHITE			

MINIMUM GOALS	BLUE COLLAR PLACEMENT	NON-BLUE COLLAR PLACEMENT
I. DAYS UNEMPLOYED BEFORE PLACEMENT	29	38
II. HOURLY WAGE AT PLACEMENT	1.76	1.78
III. DAYS WORKED DURING YEAR AFTER PLACEMENT	206	124
IV. EARNINGS DURING YEAR AFTER PLACEMENT *IV = 8 X II X III*	2900	1765

JA 02 JOB AGENT INCENTIVE PAY - INITIAL GOALS REPORT

EXHIBIT 1

INTERIM REPORT

1.	CLIENT	J DOE	4.	FIELD OFFICE NO.	1234
2.	SSA NO.	123-45-6789	5.	JOB AGENT NO.	56
3.	DATE ASSIGNED TO JOB AGENT	10-17-72	6.	REPORT DATE	11-21-72

I. LENGTH OF PERIOD UNTIL PLACEMENT
EXCLUDING TRAINING AND/OR TEMPORARY JOBS

A. ACTUAL --------- 19

B. INITIAL GOAL --- 29

II. HOURLY WAGE AT PLACEMENT

A. ACTUAL -------- 2.05

B. INITIAL GOAL -- 1.76

III. DAYS WORKED DURING YEAR AFTER PLACEMENT

A. INTERIM ESTIMATE --- 217

B. INITIAL GOAL ------- 206

IV. EARNINGS DURING YEAR AFTER PLACEMENT

A. INTERIM ESTIMATE -- 3558
B X IIA X IIIA

B. INITIAL GOAL ------ 2900

V. CALCULATION OF INTERIM PAYMENT POINTS

A. INTERIM CALCULATION OF BENEFITS FROM J.A. SERVICES -- 822
*IB - IA = D, IVA - IVB = E, B X D X IIA = F,
E + F = RESULT. IF NEGATIVE, MAKE ZERO*

TIMES

B. INTERIM POINT FACTOR ---- 1/3

EQUALS

C. INTERIM PAYMENT POINTS -- 274

JA 03 JOB AGENT INCENTIVE PAY - INTERIM REPORT

EXHIBIT 2

FINAL REPORT

1.	CLIENT	J DOE	4.	FIELD OFFICE NO.	1234
2.	SSA NO.	123-45-6789	5.	JOB AGENT NO.	56
3.	DATE ASSIGNED TO JOB AGENT	10-17-72	6.	REPORT DATE	12-18-73

I. LENGTH OF PERIOD UNTIL PLACEMENT
EXCLUDING TRAINING AND/OR TEMPORARY JOBS

A. ACTUAL --------- 19

B. INITIAL GOAL --- 29

II. HOURLY WAGE AT PLACEMENT

A. ACTUAL -------- 2.05

B. INITIAL GOAL -- 1.76

III. EARNINGS DURING YEAR AFTER PLACEMENT

A. ACTUAL -------- 3360

B. INITIAL GOAL -- 2900

IV. CALCULATION OF FINAL PAYMENT POINTS

A. FINAL CALCULATION OF BENEFITS FROM J.A. SERVICES -- 624
*IB - IA = D, IIIA - IIIB = E, B X D X IIA = F,
E + F = RESULT. IF NEGATIVE, MAKE ZERO*

LESS

B. INTERIM PAYMENT POINTS -- 274

EQUALS

C. FINAL PAYMENT POINTS ---- 350
IF NEGATIVE, MAKE ZERO

JA 04 JOB AGENT INCENTIVE PAY - FINAL REPORT

EXHIBIT 3

hence, the incentive reward he ultimately receives depends on how well he does in terms of each of the goals listed under the first three Roman numerals in Exhibit 1. (Earnings during the year after placement is not an independent goal but is simply the product of the wage rate and days worked.) There is, however, a "tradeoff" between these goals. For example, if the job agent takes longer to place a client than specified, he may still be eligible for an incentive payment for his services if the client's starting wage or days worked are sufficiently high.

The second report (Exhibit 2) provides comparisons of the actual wage rate at placement and the length of time until placement with the goals in these areas originally established for the client. Based on the results of these comparisons, an interim or tentative prediction of client benefits from job agent services is also reported.

At the end of the follow-up period, one additional comparison is possible: the clients' earnings during the year after placement can be compared with the original earnings goal for the client. On the basis of this additional information, it is now possible to estimate the value of the job agent's services over the entire evaluation period. These calculations will appear in the final report (Exhibit 3) issued to the job agent and his supervisor.

As shown in Exhibits 2 and 3, payment points are calculated at the time of placement and one year after placement. Since full knowledge of the total value of the job agent's services over the entire evaluation period will not be available until one year after placement, interim payment points will be calculated by reducing the interim calculation of benefits from job agent services by two-thirds. This means that the job agent, in effect, receives a partial "installment" payment at placement based on both his performance up to that point and a prediction of how valuable his services are likely to be to his client over the next year. The reason for paying the job agent on an installment basis is that the prediction of the value of his services during the year after placement could be in error. This will occur if the job agent fails to meet the days worked or job stability goal established for the client. The installment system

should provide the job agent with both an immediate reward for his initial efforts to place a client and a strong incentive to do what he can to keep the client as continuously employed as possible throughout the year.

One year after placement, the job agent receives his final installment of pay points. As Exhibit 3 indicates, these will equal the final calculation of benefits from job agent services less the interim payment points. Thus, if during the year after placement, the client does exactly as well as predicted, the job agent will receive credit for the remainder of the benefits of his services -- in effect, the payment points that were held back at the time of the interim calculation. The job agent can, in fact, add to his number of payment points if he is able to bring about increases in the client's wage rate during the year or help the client to exceed the job stability goal. Similarly, if the client's wages fall or he works fewer days than predicted, the job agent will, in effect, lose payment points. However, for reasons indicated earlier, negative situations will be disregarded. Thus, payment points are never allowed to fall below zero.

THE EVALUATION PERIOD

Throughout this report we have used a number of temporally related terms, for example, "follow-up period," "evaluation period," "time of placement," and "length of the period until placement." A more explicit discussion of these terms is now in order. As already indicated, the follow-up period refers to the year after placement, and the evaluation period -- that is, the time span over which the services of the job agent are measured -- begins when the client is added to the job agent's caseload and ends one year after he is placed. Of course, job agent services may continue to help clients long after they are initially received, possibly until the clients retire from the labor force. Therefore, a technical case can be made for evaluating the services a job agent provides over an extended period of time, possibly several decades. It is obviously not feasible, however, to keep track of clients for so long a period. Moreover, a year-long follow-up period comes closest to being simultaneously consistent with both the Income

Dynamics Panel data from which the incentive system standards were developed and the 18 month follow-up period required by AB-1463. Furthermore, the longer the follow-up period, the longer job agents must wait to receive their incentive rewards. If an incentive system is to evoke appropriate responses from participants, the reward should follow the delivery of job agent services as closely as possible.

Because of the year-long follow-up period, incentive rewards during the first year the plan is in operation will be based entirely upon the accumulation of interim payment points earned at the time clients are originally placed. After a year, incentive rewards will be based on both interim payment points and final payment points accumulated over a calendar quarter.

Since under the incentive pay system unemployment does not end and earnings are not counted until the client is placed, the definition of "placement" is critical. Although the job agent's initial reward partly depends on finding a client a job quickly, it is desirable that rewards for placing clients in casual, short-term jobs be minimized. (The installment procedure described above is also designed with this intent.) Accordingly, before a client is considered "placed" for the purposes of the system, he must be continuously employed for at least three weeks. If the qualifying period were much longer, the job agent would not receive his incentive pay until long after the client's first day on the job. This might reduce the system's incentive effects. Furthermore, a longer period is inconsistent with the data on which the standards are based and might distort the incentive system.

In measuring the length of the period until placement, the count will be suspended while a client is in a bona fide institutional training program or in jobs that last for less than three weeks. Otherwise, the incentive program would tend to discourage job agents from placing clients into training slots or into situations where they can earn income necessary for their support while the job agent is searching for a more permanent position. In effect, the incentive system is neutral toward time spent in these activities. However, the incentive system will reward a job agent if a training program

actually succeeds in improving a client's employment opportunities over what they would have been in the absence of the program.

Once a client is officially placed, a count begins of his earnings during the year-long follow-up period. The client may, of course, work on several different jobs or have one or more periods of unemployment during the year. Nevertheless, if the incentive system is to operate properly, once the follow-up period officially begins the earnings count must not be suspended. In fact, an important objective of the incentive system is to penalize job agents for excessive job instability sustained by their clients during the post-placement period.

ALLOCATION OF INCENTIVE PAY POINTS WHEN A JOB AGENT TERMINATES

Under the incentive system, a job agent is responsible for providing follow-up information at the time a client is placed and one year after the client is placed. Presumably, when a job agent terminates prior to either of these points in time, his caseload is distributed to other job agents who will then complete the required follow-up reports. Because of the complexities involved in remunerating persons long after they have ceased being state employees, a former job agent will receive no credit for incentive points based on follow-up information turned in after he terminates.

The job agent who inherits a case will receive credit based on a pro-rata formula. For example, if the new job agent was responsible for a client during the last nine months of the year after the client was placed, he receives 75 percent of any final payment points calculated. Similarly, if it took 40 days to place a client and the new job agent was responsible for the client during the last 20 days of this period, he will receive half of any interim payment points. Although this procedure recognizes that a job agent does not deserve full credit for the earnings improvements enjoyed by a client who has probably received some services from another job agent, it also establishes an incentive for the new job agent to provide the client with whatever services he still needs.

VI. CONCLUSIONS

The incentive pay plan developed through the cooperative efforts of Rand and the Department of Human Resources Development represents a new departure for civil service employees. The plan is aimed at fulfilling both legislative intent and HRD management objectives by rewarding job agents for placing the disadvantaged in meaningful, stable jobs. Under the plan, job agents will, for the first time, receive a statement of expected minimum goals or standards for each client and feedback information on how well they are doing relative to these goals. The incentive rewards received by a job agent will depend on the extent to which he exceeds the minimum goals.

We do not view incentive pay as a panacea. It may be that experience with implementation will result in major system modifications. However, we do view the methodology developed as an important tool for evaluating the effectiveness not only of job agents but also of other manpower personnel and programs, and for generating information necessary for future program planning.

Appendix A

AN ECONOMETRIC MODEL FOR THE EVALUATION OF JOB AGENTS OF THE CALIFORNIA DEPARTMENT OF HUMAN RESOURCES DEVELOPMENT

INTRODUCTION

The principle upon which the proposed incentive pay system is based is that the incentive reward should be made for demonstrated improvements in clients' earnings brought about through services provided by the job agent. In effect, the job agent is paid a bonus on the improvement he brings about in his client's earnings; a job agent's performance and his incentive payments are based on the total "client's income gain" (CIG).

To calculate the income gained by a client from seeing a job agent, it is necessary to subtract from the client's future income the earnings the client would have received if he had not seen the job agent. In general these forgone earnings -- opportunity costs -- are the largest single cost items of participating in the job agent program.[1] As a result, it is necessary to establish a control group to provide a means of estimating the appropriate opportunity costs to charge against the job agent program. However, the establishment of a control group is often a difficult, costly, and time-consuming task.

As a case in point, an examination of Gerald Somers' classic West Virginia manpower retraining study indicates the many difficulties, both theoretical and practical, encountered in setting up a control group. Somers argues that we would have "the best evidence of the worth of retraining if we could somehow have compared the employment experience of the men and women following training with the employment experience the same people would have had if they had not been retrained."[2]

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[1] For example, Schultz has estimated that wages forgone by students during high school account for three-fourths of the total cost of their education. See Theodore W. Schultz, *The Economic Value of Education*, Columbia University Press, New York, 1963, p. 28.

[2] Harold A. Gibbard and Gerald C. Somers, "Government Retraining of the Unemployed in West Virginia," in Gerald G. Somers (ed.), *Retraining the Unemployed*, The University of Wisconsin Press, Madison, 1968, p. 25.

Of course, this procedure is logically impossible. The next best procedure would be to compare the subject population with "people like them in every essential respect," except participation in the program. However, Somers also found the procedure of drawing such a carefully matched control group infeasible. He finally established a control group of 453 unemployed men and women drawn at random from the files of local Employment Service offices. Such a control group has the advantage of being drawn from approximately the same pool as the actual trainees. However, it has the disadvantage that it cannot be treated as a random cross-section of the unemployed, since membership in the pool requires initial registration with the Employment Service.

Aside from the difficulty of formulating a control group, collecting information from control group members is expensive in terms of resources and time. For example, Borus and Buntz surveyed numerous evaluative studies of manpower programs and found an average cost per control group respondent of between $60 and $70, with a range of control group follow-up responses from 33 to 92 percent. The average response rate was about 60 percent.[1] In addition, the establishment of unique control groups to evaluate single manpower programs requires that the evaluation can not take place until all follow-up information is collected and processed -- sometimes at a delay of several years. What is needed is a "national control group," which can be used as a uniform standard to evaluate job agent performance as well as other manpower programs, and a methodology that can relate this control group to the evaluative task at hand. This would spread the cost of the control group over many individual manpower programs and could provide for interim program evaluations at the time of placement, before the full follow-up period. The next four sections present: (1) a theoretical model that can be estimated with data from a national control group to evaluate the job agent program and other manpower programs; (2) an appropriate statistical model; (3) data from which the national control group can be drawn; and (4) empirical results obtained by applying the above model and data.

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[1]Michael Borus and Charles G. Buntz, "Problems and Issues in the Evaluation of Manpower Programs," *Industrial and Labor Relations Review*, Vol. 25, No. 2, January 1972, p. 239.

THE MODEL OF CLIENT INCOME GAIN

The incentive pay system is based on the assumption that job agents are to be rewarded for maximizing the total income gain of their clients. This objective can be obtained if the period the client is unemployed is reduced, or his post-unemployment wage or job stability is increased over what they would have been had he not participated in the job agent program. Unfortunately, in calculating the client income gain it is impossible to make a direct measure of the client's economic behavior had he not seen the job agent. However, by observing the behavior of a control group it is possible to infer the "expected" behavior of a client had he not participated in the program.[1] Assume, for example, that the job agent has only one client. Disregarding all program and direct costs, the net pecuniary benefits for an individual client -- the client income gain -- can be expressed as follows:

$$CIG = MI_A - EMI_A \qquad (1)$$

where CIG = the net pecuniary benefit for an individual -- the client's income gain

MI_A = the client's actual money income in period A

EMI_A = client's expected money income in period A, inferred from the behavior of a similar person who did not participate in the program -- the opportunity cost of joining the program.

To calculate the net benefit from participating in the job agent program, as shown in Eq. (1), it is necessary to define an appropriate time frame over which to measure money income -- period A -- and provide a means of calculating the money income the client would have

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[1] Cain and Stromsdorfer note that they used "the amount of wages earned during the training period by the comparable group of workers who took no retraining, which is to represent what income the trainees would have earned." Glen G. Cain and Ernst W. Stromsdorfer, "Retraining in West Virginia: An Economic Evaluation," in Somers (ed.), 1968, pp. 307-308.

expected had he not participated in the program -- the so-called opportunity cost.

The determination and treatment of an appropriate benefit period is an important step in any evaluative study. Ideally, one would like to measure the discounted (present value) stream of net earnings that occur from participation in the program over the working life of the client. Practically, it is possible to measure post-program earnings only over relatively short periods of time -- traditionally one or two years. As a result, the net effects of participation have been measured either in terms of rates of return, which require assumptions about the discount rate and the future stream of earnings for client and members of the control group, or in terms of earnings over a simple-undiscounted pay-back period.[1] In the incentive pay system, clients' income gain will be based on total earnings during a predetermined period.

As noted, one way a job agent can increase a client's earned income is to reduce the duration of unemployment below what the client would have expected had he not received program services. Similarly, net benefits from the program will be increased if the employment situation -- wage rate and days worked -- can be improved. Accordingly, the appropriate time period over which to measure a client's income is equal to his expected duration of unemployment had he not participated in the program, plus a predetermined follow-up period. Therefore, for any client:

$$A = P + EDU \qquad (2)$$

where A = benefit period
P = predetermined post-unemployment follow-up period
EDU = expected duration of unemployment, if the client had not joined the program.

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[1] For a discussion of payback period and rates of return, see Cain and Stromsdorfer, pp. 320-327.

It follows, then, that calculation of the client's income gain requires estimation of EDU for a person similar to the client, but who did not participate in the program. Furthermore, since earned income is not received during periods of unemployment,

$$EMI_A = EWR_P \cdot EDW_P \tag{3}$$

where EWR_P = expected wage rate in follow-up period, P, if the client had not joined the program

EDW_P = expected days worked in the follow-up period, if the client had not joined the program.

Therefore, it is also necessary to estimate EWR_P and EDW_P.

The expected behavior of a job agent client can be inferred from the actual behavior of a similar person in the control group. This requires modeling the economic behavior of control group members and estimating the model using appropriate statistical techniques. The three major factors that determined the net benefit derived from the program are the duration of unemployment and the wage rate and days worked in the subsequent period. The following equation set (4) shows these three "endogenous" labor market variables as functions of both endogenous and exogenous variables in a simultaneous system. A discussion of the variables in this system appears in the following section.

$$\text{(a)} \quad DU = f_1(WR_p, Z_1)$$

$$\text{(b)} \quad DW_p = f_2(WR_p, Z_2) \tag{4}$$

$$\text{(c)} \quad WR_p = f_3(DU, DW_p, Z_3)$$

where DU = days unemployed

DW_p = days worked in period P

WR_p = wage rate in period P

Z_1, Z_2, Z_3 = sets of exogenous variables -- personal characteristics of the unemployed such as demographic, previous work history, education.

Equation set (4) can be estimated for people similar to program clients by using appropriate national control group data. However, because of the simultaneous nature of the model, consistent estimates of the structural parameters of the model must be obtained by using the technique of two-stage least squares (2SLS) regression. Estimates for the expected values of the three endogenous variables -- duration of unemployment and post-unemployment wage rate and days worked -- for a person similar to a client with a given set of characteristics, Z', can be calculated by using the reduced form forecast of the endogenous variables and the 2SLS regression estimates.[1] The behavior of clients, had they not joined the program, can then be inferred from these calculations. For example,

$$EDU' = \alpha_{11} + \alpha_{12} WR_P^* + \sum_{i=3}^{n} \alpha_{1i} Z'_{1i} \quad \text{(2SLS equation)} \qquad (5)$$

where EDU' = expected duration of unemployment for a client with characteristics Z', if he had not participated in the program

$WR_P^* = \beta_{11} + \sum_{i=2}^{n} \beta_{1i} Z'_{1i}$ (reduced form forecast)

Z'_i = complete set of exogenous variables

Z'_{1i} = subset of exogenous variables

α, β = regression coefficients

n = total number of endogenous and exogenous ariables.

Similarly,

$$EDW'_P = \alpha_{21} + \alpha_{22} WR_P^* + \sum_{i=3}^{n} \alpha_{2i} Z'_{2i} \quad \text{(2SLS equation)} \qquad (6)$$

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[1] Note that the effect of substituting the reduced form forecast (WR_P^*) into equation (5) is that $EDU = DU^*$. Similarly, by substituting the reduced form forecasts of WR_P^*, DU^* and DW^* into equations (6) and (7), $EDW_P = DW_P^*$ and $EWR_P = WR_P^*$.

and

$$EWR'_P = \alpha_{31} + \alpha_{32}DU^* + \alpha_{33}DW_P^* + \sum_{i=4}^{n} \alpha_{31}Z'_{3i} \quad \text{(2SLS equation)} \quad (7)$$

where EDW'_P = expected days worked in follow-up period for a client with characteristics Z', if he had not participated in the program

EWR'_P = expected wage rate in follow-up period for a client with characteristics Z', if he had not participated in the program

$$DU^* = \beta_{21} + \sum_{i=2}^{n} \beta_{21}Z'_{2i} \quad \text{(reduced form forecast)}$$

$$DW_P^* = \beta_{31} + \sum_{i=2}^{n} \beta_{31}Z'_{3i} \quad \text{(reduced form forecast)}$$

Z'_{2i} and Z'_{3i} = subsets of exogenous variables.

Based upon the above reduced form and 2SLS regression estimates, it is possible to calculate EDU', EDW'_P and EWR'_P for a client with a set of characteristics, Z'. These expected values, with the policy-determined value of P, define A' and EMI'_A, and together with the observed MI_A, allow the income gain the client derives from participation in the job agent program to be measured.

Equation (1) represents a standard means of calculating the net benefit derived from a manpower program. It is unique only in that the opportunity cost, EMI_A, is statistically obtained from a national control group rather than from a control group especially constructed for the individual program. However, the full follow-up period must pass before actual post-program income, MI_A, is reported and the client's income gain can be calculated. Under the job agent incentive pay system this would mean a delay of over a year between the time the job agent placed a client and the time he received his incentive payment. Such a long delay between placement and payment might negate some of the incentive features of the new pay system. However, this problem can be overcome. One of the advantages of using a national

control group is that an estimate of client income gain can be calculated when a client is first placed on a job and a partial incentive payment made at that time. For example, at time of placement, compared with the time a client first joined a job agent's caseload, several additional pieces of information are known -- the actual duration of unemployment, the actual post-unemployment wage rate, and occupation. Therefore, for a client with characteristics Z',

$$ICIG = \hat{EMI}'_A - EMI_A \tag{8}$$

where $ICIG$ = Interim client income gain

$\hat{EMI}'_A$ = revised projection of money income in period A

EMI'_A = initial projection of expected money income in period A.

and

$$\hat{EMI}'_A = \hat{EDW}'_P \cdot WR_P + [EDU' - DU] \cdot WR_P \tag{9}$$

where $\hat{EDW}'_P = \alpha_{21} + \alpha_{22}WR_P + \sum_{i=3}^{n} \alpha_{21}\hat{Z}'_{21}$

WR_P = actual post-unemployment wage rate

DU = actual duration of unemployment

$\hat{EDW}'_P$ = revised projection of days worked in the post-unemployment period

$\hat{Z}'_{2i}$ = revised characteristic set, contains information on the actual post-unemployment occupation.

If, for example, as a result of participation in the job agent program only the number of days a client was unemployed was reduced, the interim client income gain would equal $[EDU' - DU]WR_P$. If the job agent was responsible only for an increase in the post-unemployment wage rate, the interim client income gain would be equal to $[\hat{EDW}'_P \cdot WR] - [EDW'_P \cdot EWR'_P]$.

THE STATISTICAL MODEL

As noted above, the three major factors necessary to calculate client income gain are the expected duration of unemployment and the expected days worked and wage rate in the post-unemployment period. Equation set (4) shows these factors as functions of exogenous and endogenous variables. Table A-1 presents the individual variables and their hypothesized sign. The exogenous factors listed are generally included in job applications and on client profile reports.

Table A-1

EQUATION SET FOUR

	Equation (4a) $DU = f_1$	(4b) $DWP = f_2$	(4c) $WR_p = f_3$
Endogenous variables			
DU			-
DW			-
WR_p^p	+	±	
Exogenous variables (Z)	Z_1	Z_2	Z_3
Family characteristics			
Marital status (married)	-	+	
Size	-	+	
Personal characteristics			
Sex (male)	-	+	+
Race (white)	-	+	+
Handicapped	+	±	-
Education	-	+	+
Vocational training	-		+
Age	-	+	+
Veteran	-	+	
Welfare	+	-	-
Work history, previous year			
Wage rate	-	+	+
Days worked	-	+	+
Days unemployed	+	-	-
Other factors			
Union membership	-		+
Occupation (blue collar)	±	±	±
Private transportation	-		
Physical location (rural)	+	-	-
Regional location (west)	-	+	+

Equation (4a) is based on a model of job search and unemployment developed by Mortensen.[1] From his theoretical formulation Mortensen has shown that, other things being equal, the higher an individual's acceptance or reservation wage, the longer he is likely to be unemployed. On the other hand, Mortensen concludes that the greater the individual's skill, the greater the number of available job opportunities and the shorter the period he can expect to be out of work. If the individual's wage at placement can be taken as a reasonable surrogate for his reservation wage and his wage on his last job as a measure of his productivity, the former should be positively related to duration of unemployment and the latter negatively related.[2]

Although skill levels and the placement wage rate should be prominent in determining the duration of unemployment, other characteristics may also be important. There appear to be at least four groups of such characteristics: family characteristics, personal characteristics, previous work history, and other factors such as location.

Family factors should be important in determining the effort an unemployed individual expends looking for work. Certainly, being unemployed can be an unpleasant experience. However, it becomes more than that when a person has a family to support, and several other people depend upon his job for their well-being. Therefore, one might expect that married people and people who have large families would

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[1] See Dale T. Mortensen, "Job Search, the Duration of Unemployment, and the Phillips Curve," *American Economic Review*, Vol. 60, No. 5, December 1970, pp. 848-850.

[2] *Ibid.* In the Mortensen model the duration of unemployment is shown to be a function of the distribution of all relative wage offers, the maximum wage offer commensurate with the individual's skill level, and his minimum acceptance or reservation wage. An important feature of this formulation is that these factors also define the wage the individual can expect to receive after placement. Therefore, if the expected and actual placement wages are equal, and if the distribution and maximum wage offer are given, the expected duration of unemployment can be defined without information on the reservation wage rate. Mortensen also suggests that employment opportunities and the maximum wage offer are functions of the characteristics of the person searching the job market. In particular, the duration of unemployment is a decreasing function of skill.

try harder to search the labor market and thus should experience shorter periods of unemployment.

The personal characteristics of the individual should also be important in determining how well he searches and how receptive future employers are likely to be. For example, there is some evidence that the labor market discriminates against females and minorities. Similarly, the handicapped, the high school dropout, and welfare recipients are more likely to have difficulty in finding employment. However, people who have special training and people who have access to private transportation are likely to experience shorter periods of unemployment.

In general, yesterday's economic behavior should be an important predictor of tomorrow's behavior. People with strong work histories, as measured by previous days unemployed, days worked, and wage rate are likely to have shorter periods of unemployment. Furthermore, previous work history acts as a proxy for other factors not explicitly included in the analysis. For example, it is likely that the job-related consequences of addiction are reflected in the previous work history of the addict. As such, the model provides that since the past economic behavior of an addict would probably be poorer than that of a nonaddict, his future economic performance would also be poorer.

A final set of factors also influences the length of time an individual can expect to be unemployed -- occupation and union membership, urban location, and regional location. For example, union members and people living in urban areas should have an advantage in their search of the job market.

In sum, equation (4a) shows that the duration of unemployment is a function of the wage rate the individual receives upon placement and a set of characteristics that helps to define him and his employment opportunities. In effect, equation (4a) approximates the reduced form of Mortensen's model.

Equation (4b) suggests that the labor supplied in the post-unemployment period depends upon the personal characteristics of the individual as well as the prevailing wage rate. Economic literature is replete with discussions of the shape of the labor supply curve,

which suggest that the impact of wage change on labor supplied is indeterminant and depends on the relative size of the income and substitution effects.[1]

Many of the same exogenous factors that are important in determining the duration of unemployment are also likely to be important in determining the number of days the individual is likely to work in the year following placement and for similar reasons. For example, an individual with a large family may feel the need for a larger income than a single person and thus is likely to work more days. There are, however, several factors included in equation (4a) but excluded in equation (4b). Vocational training should be helpful in finding employment and even in determining the wage the person is likely to receive. However, it is not included in equation (4b) since, once on the job, it should not affect the stability of the job. Similarly, union membership and previous occupation are probably not important in determining job stability.

Equation (4c) implies that the wage rate in the post-unemployment period is related to the number of days an employer is willing to hire the individual and the length of the job search (duration of unemployment), as well as the characteristics of the person. For example, Kasper found that the average asking price of labor decreased over the duration of unemployment.[2] This is consistent with a declining marginal utility of leisure and a deteriorating household asset position over time and implies a negative relationship between the post-unemployment wage rate and the duration of unemployment. Furthermore, there may also be a negative relationship between day's work and the wage rate in the post-unemployment period. Typically, in certain types of seasonal work, such as construction, employers pay premium wages to compensate workers for the loss of income when short term jobs are terminated.

Although these endogenous factors should be important, the characteristics of the individual, his work history, and his location are

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[1]For a review of supply curve theory see Richard Perlman, *Labor Theory*, John Wiley & Sons, Inc., New York, 1969, pp. 3-28.

[2]Hirschel Kasper, "The Asking Price of Labor and the Duration of Employment," *Review of Economics and Statistics*, Vol. 49, May 1967, p. 166.

also likely to determine the wage rate he will receive after placement. In general, factors that are negatively associated with duration of unemployment and positively associated with job stability will have a positive sign in this equation. Some factors excluded from equation (4b), such as union membership and vocational training, are expected to be positively associated with higher wages and are included in equation (4c). Family characteristics, however, are excluded from this equation -- such factors as family size are not expected to affect wage rates. Similarly, although the accessibility of private transportation may be important in determining the duration of unemployment, it should not affect the hourly wage rate after placement.

A NATIONAL CONTROL GROUP: THE INCOME DYNAMICS PANEL

The calculation of either the initial or revised expected money income requires the estimation of equation set (4). This section examines a set of survey data that can be used as a national control group and the data base upon which to estimate the above model. The results of estimating the model are presented in the next section. The requirements for such a control group are that it must be randomly drawn from a population similar to that of participants in the job agent program and that measures of economic behavior can be traced over time. The Income Dynamics Panel of the University of Michigan's Survey Research Center appears to provide an appropriate data source.[1]

In the spring of 1966 the Federal Office of Economic Opportunity and the Bureau of the Census undertook a national survey of families living in 30,000 dwelling units -- the Survey of Economic Opportunity. The following year families living in the same dwelling units were interviewed, whether or not they were the same families interviewed the previous year. This procedure was found to be deficient in terms of understanding the dynamics of poverty. Therefore, the Survey Research Center was contracted to undertake a survey that would follow the same families in 1968, 1969, and again in 1970.

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[1] For a complete discussion of this survey, see James N. Morgan and James D. Smith, *A Panel Study of Income Dynamics*, Vols. I-III, Institute for Social Research, Survey Research Center, University of Michigan, Ann Arbor, 1969.

The Income Dynamics Panel contains a representative cross-section of the United States as well as a supplemental sample of families known to have low incomes. Between 1968 and 1970 the representative cross-section sample netted 2,574 interviews, and the supplemental sample netted 1,891 interviews. Information collected from these interviews was designed to explain short-term changes in the economic status of individuals and families.

The IDP members interviewed in the spring of 1968, 1969, and 1970 supplied information that portrayed their employment experience in 1967, 1968, and 1969. Since the job agent program is generally reserved for individuals who are unemployed and disadvantaged, the model was estimated using a subsample of IDP members who met the definition of "disadvantaged" and had some unemployment in 1968. As a result. days unemployed in 1968, days worked in 1969, and 1969 wage rate represented the endogenous variables DU, DW_p, and WR_p, respectively. Factors that reflected previous employment experience -- 1967 days worked, days unemployed, occupation, wage rate, and money income -- were treated as exogenous personal characteristic variables.

To facilitate analysis, interviewees from the IDP were assigned to four subsamples on the bases of being classified "disadvantaged" and having some unemployment in 1968. A disadvantaged person was identified according to the standards of the California Department of Human Resource Development as one who belongs to a family with income below the following (poverty) level:

Family Size	Family Income
1	$1,900
2	3,000
3	4,100
4	5,200
5	6,200
6	7,000
For each additional dependent add:	700

The four subsamples were: (1) employed, not disadvantaged; (2) employed, disadvantaged; (3) some unemployment, not disadvantaged; and (4) some unemployment, disadvantaged. Only the last subsample was actually used to estimate EMI.

Table A-2 presents select variables for the four subsamples.[1] The variables are grouped into three categories: (1) labor market and work history, (2) demographic characteristics, and (3) location.

As expected, the disadvantaged tended to have poorer work histories than the nondisadvantaged. However, the employment behavior of those disadvantaged who indicated that they had no unemployment in 1968 was considerably inferior to that of those who had some unemployment. For example, among the disadvantaged in 1968, those who had some period of unemployment earned $1,782 more and worked 94 more days at $1.04 more per hour on the average than those who indicated they had no unemployment. This occurred even though their mean duration of unemployment was 78 days. This suggests that although many disadvantaged persons had no unemployment, they had substantial periods in which they withdrew from the labor force. These people are more likely to be female, physically handicapped, single, and high-school dropouts -- all groups with relatively low labor-force participation rates.

In general, unemployed persons who were classified as disadvantaged had poorer 1969 employment experiences than nondisadvantaged persons. On the average, the disadvantaged had substantially lower hourly earnings, income, and days worked in 1969. Furthermore, they tended to come from large families and were more likely to be young, handicapped, on welfare, Negro or Spanish-surnamed, high-school dropouts, and live in a rural area. Although these factors help identify the disadvantaged unemployed, they may not explain variations in the economic behavior of persons *within* that group. The following section will examine the economic behavior of the disadvantaged unemployed as the Income Dynamics Panel data are used to estimate the model presented above as equation set (4).

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[1]The IDP data base contains over 1,600 variables on each respondent.

Table A-2

WEIGHTED MEANS OF SELECT VARIABLES FOR SUBSAMPLES OF INCOME DYNAMICS PANEL
(1968 status)

		Employed		Unemployed	
		Non-Dis-advantaged	Disad-vantaged	Non-Dis-advantaged	Disad-vantaged
Labor Market and Work History					
1967 Individual income	($)	7,756.03	1,238.15	6,067.29	3,479.57
Family income	($)	10,456.94	3,561.92	8,204.28	5,421.67
Days worked		258.18	89.07	243.85	194.00
Days unemployed		2.24	4.08	18.32	35.41
Hourly wages	($)	3.69	.86	3.13	1.99
1968 Individual income	($)	8,474.01	1,009.06	6,615.86	2,791.31
Family income	($)	11,809.61	3,467.69	8,950.78	4,433.78
Days worked		257.00	76.87	238.25	170.75
Days unemployed		0.00	0.00	36.69	77.86
Hourly wages	($)	4.02	.85	3.52	1.89
1969 Individual income	($)	8,948.10	1,256.72	7,373.76	3,837.91
Family income	($)	12,565.11	3,971.79	9,985.51	5,748.92
Days worked		243.77	79.38	244.18	189.45
Days unemployed		2.32	4.31	17.62	37.72
Hourly wages	($)	4.39	1.02	3.80	2.51
1967 Blue collar	(%)	44.50	36.60	80.40	77.30
1969 Blue collar	(%)	40.40	21.20	77.10	66.30
1968 Recent long-term unemployment	(%)	3.60	3.60	14.90	27.30
1968 Labor union	(%)	26.60	8.90	55.90	20.10
Demographic Characteristics					
Family size		3.29	2.99	3.34	5.07
Age		31.82	26.05	30.05	23.65
Male	(%)	86.40	59.80	85.10	74.50
Physically handicapped	(%)	8.50	42.30	6.10	26.30
Vocational training	(%)	23.70	16.00	27.50	23.40
White	(%)	92.00	77.10	85.60	69.50
Negro	(%)	5.90	20.00	13.20	25.60
Spanish surname	(%)	1.10	2.20	1.30	4.60
High school dropout	(%)	31.50	72.60	54.60	69.30
Married	(%)	80.00	50.80	80.10	69.10
Veteran	(%)	43.50	17.80	43.30	32.20
Number of cars in family		1.37	.69	1.31	.94
Welfare	(%)	.50	17.60	1.30	19.80
Location					
Lives in west	(%)	16.40	14.60	14.70	24.50
Lives 30 miles or more from SMSA	(%)	29.00	46.80	31.30	54.30
Subsample Size		1,774.00	1,365.00	219.00	187.00

STATISTICAL RESULTS: AN EXAMINATION OF THE LABOR MARKET BEHAVIOR OF THE DISADVANTAGED UNEMPLOYED

This section presents the regression results obtained by fitting the Income Dynamics Panel data to the model presented in equation set (4). These regressions can be used to establish a norm against which to evaluate job agent performance. Specifically, they can be used to formulate the initial and revised estimates of expected money income used in the calculation of net benefits indicated by equations (1) and (8).

The actual subsample of the Income Dynamics Panel used in this study was weighted to eliminate bias from differential response rates. Such bias could be significant in a comparison of the behavior of persons with different probabilities of response.[1] Furthermore, the subsample was restricted to those individuals who were unemployed in 1968 and disadvantaged, according to California standards.

Since the equations in set (4) are simultaneously determined, ordinary least squares may produce inconsistent estimates of structural parameters. Therefore, equation set (4) was estimated using the technique of two-stage least squares. Table A-3 presents the reduced form estimates and Table A-4 presents the 2SLS estimates. In both tables, triple asterisks indicate binary variables where zero equals "no" and one equals "yes." Double asterisks indicate variables are statistically significant[2] at the five percent probability level.

The reduced form equations express each endogenous variable as a function of the exogenous or predetermined variables.[3] The reduced form equations depend on the underlying structural equations of the model and allow the prediction of the simultaneously determined endogenous variables based solely on observations of the exogenous

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[1]For a full discussion of sample weights see Morgan and Smith, Vol. III, pp. 12-31.

[2]See P. J. Dhrymes, "Alternative Asymtotic Tests of Significance and Related Aspects of 2SLS and 2SLS Estimated Parameters," *Review of Economic Studies*, Vol. 36 (2), No. 106, pp. 213-226.

[3]For a derivation of the reduced form see E. Malinvaud, *Statistical Methods of Econometrics*, Rand McNally and Co., Chicago, 1966, p. 499.

Table A-3

REDUCED FORM REGRESSION ESTIMATES

	Dependent Variables					
	1968 Days Unemployed (DU^*)		1969 Days Worked (DW_p^*)		1969 Wage Rate(¢/Hr) (WR_p^*)	
Explanatory Variables	Coef	T	Coef	T	Coef	T
Family size	-4.15	-2.27**	3.46	1.33	-.89	-.18
Married***	-60.15	-3.15**	71.35	2.63**	12.92	.25
Male***	-8.33	-.51	-51.38	-2.20**	-17.58	-.40
Physically handicapped***	-21.39	-2.41**	10.81	.86	-80.14	-3.37**
Vocational training***	34.11	3.78**	-8.02	-.63	83.64	3.46**
Welfare***	9.63	.84	-50.57	-3.12**	-83.80	-2.75**
White***	-33.94	-1.96**	94.48	3.85**	-69.46	-1.50
Spanish surname***	-3.62	-.32	-19.84	-1.24	-13.14	-.44
Veteran***	-15.25	-1.71**	39.06	3.08**	-18.96	-.79
Number of cars in family	-13.91	-2.29**	.90	.10	3.02	.19
Age	2.17	3.58**	-.30	-.34	-.93	-.58
High-school dropout***	29.30	2.08**	10.90	.55	-6.57	-.17
Age x high-school dropout	-.32	-.66	-1.34	-1.91**	3.01	2.28**
1967 income	.01	3.39**	-.004	-.85	.04	4.80**
1967 days worked	-.34	-5.18**	.26	2.73**	-.58	-3.26**
1967 wage rate	-16.79	-3.67**	8.59	1.32	-26.44	-2.16**
1967 days unemployed	.06	.88	-.05	-.52	.43	2.28**
Recent long-term unemployment***	16.17	1.92**	-6.98	-.58	-5.11	-.23
Labor union***	-15.00	-1.29	-6.79	-.41	116.27	3.73**
1967 blue collar***	-20.87	-1.72**	-20.84	-1.21	78.61	2.42**
1969 blue collar***	-9.88	-1.11	81.75	6.46**	-1.78	-.08
Rural area***	24.99	3.20**	-27.49	-2.48**	-5.63	-.27
Western States***	-26.12	-2.77**	30.76	2.30**	-36.66	-1.46
Intercept	173.8	9.41	99.64	3.80	181.3	3.67
Standard error	45.48		64.59		121.7	
F-statistic	9.32		8.28		8.14	
R^2	.57		.54		.53	
Degrees of freedom	163		163		163	

** Significant at the .05 probability level.

*** Binary variables, 1 = yes, 0 = no.

Table A-4

TWO-STAGE LEAST SQUARES REGRESSION ESTIMATES

	Dependent Variables					
	1968 Days Unemployed (DU)		1969 Days Worked (DW_p)		1969 Wage Rate (¢/Hr) (WR_p)	
Explanatory Variables	Coef	T	Coef	T	Coef	T
Endogenous						
1968 days unemployed					-1.29	-1.77**
1969 days worked					-1.16	-1.68**
1969 wage rate	.26	2.71**	-.06	-.89		
Exogenous						
Family size	-3.91	-1.72**	3.60	1.49		
Married***	-63.56	-2.65**	73.21	2.80**		
Male***	-3.70	-.18	-50.44	-2.16**	-81.86	-1.43
Physically handicapped***	-.27	-.02	2.00	.15	-90.69	-3.04**
Vocational training***	12.07	.86			118.86	3.34**
Welfare***	31.72	1.89**	-57.35	-3.68**	-128.83	-3.05**
White***	-15.64	-.73	90.21	3.82**	3.45	.05
Spanish surname***	-.16	-.01	-19.38	-1.28	-46.12	-1.09
Veteran***	-10.25	-.94	38.97	3.22**		
Number of cars in family	-14.71	-1.94**				
Age	2.42	3.18**	-.18	-.22	1.64	.76
High-school dropout***	31.04	1.76**	14.20	.74	45.03	.81
Age x high-school dropout	-1.12	-1.71**	-1.32	-1.95**	.88	.42
1967 income					.05	4.44**
1967 days worked	-.19	-2.94**	.18	2.64**	-.67	-2.43**
1967 wage rate	-9.82	-2.33**			-39.25	-2.32**
1967 days unemployed	-.05	-.52	-.04	-.37	.46	2.01**
Recent long-term unemployment***	17.51	1.66**	-7.21	-.61	8.82	.33
Labor union***	-45.64	-2.37**			88.32	2.36**
1967 blue collar***	-41.59	-2.46**				
1969 blue collar***	-9.41	-.84	83.26	6.76**	82.59	1.38
Rural area***	26.47	2.68**	-31.01	-2.98**	-3.32	-.12
Western states***	-16.46	-1.31	25.68	1.99**	-30.26	-1.03
Intercept	126.00	4.85	107.60	4.38	517.0	3.34

**Significant at the .05 probability level.
***Binary variable, 1 = yes, 0 = no.

variables. Accordingly, the reduced form estimates are used to calculate the initial expected money income (EMI).

Although the 2SLS estimates of the structural equations (4) are not used to make the initial projections of endogenous variables, they are important in the interim projections, when the actual length of unemployment and post-unemployment wage rate is known (equation 9). Furthermore, 2SLS estimates are critical in understanding the economic behavior of the disadvantaged unemployed. In effect, the reduced form estimates account not only for the direct effect of the exogenous variable on a particular endogenous variable but also their indirect effect through the other endogenous variables in the system. The 2SLS estimates allow one to distinguish between the direct and indirect effects. In other words, the 2SLS coefficient of a variable is estimated by holding all other exogenous and all endogenous variables constant. The reduced form estimates assume only that all other exogenous factors are constant.

The 2SLS estimates of equation (4a) are consistent with the hypotheses based on Mortensen's model of job search. There is a positive and significant relationship between the duration of unemployment and the wage rate the individual receives after placement. A higher wage rate implies a higher reservation wage and results in a longer period of unemployment. Furthermore, there is a significant and negative relationship between the person's skill as measured by his previous wage rate and the period of time he remains unemployed. This indicates that high skill people have better job opportunities and are thus able to secure employment in a shorter period of time.

Other factors that are significant and associated with reduced periods of unemployment are family size, being married, having access to private transportation, having stable work in the previous period, being a member of a union, and having been previously employed in a blue collar occupation. Factors significantly associated with increased duration of unemployment are being a welfare client, having a recent period of long-term unemployment, and living in a rural area.

Of particular note is the significant relationship between age and high school status (dropout), and the interaction of age and high

school status. The estimates indicate that among the disadvantaged unemployed, high school graduates below the age of 28 have less unemployment than do high school dropouts. However, the graduate's advantage decreases with age. For example, at age 20 a dropout can expect 9 days *more* unemployment than a graduate. However, at age 30 the dropout can expect 3 days *less* unemployment than the graduate. The estimates appear to indicate that among the disadvantaged unemployed a high school diploma does not improve an individual's economic situation. In fact, since relatively few high school graduates are in this group, the observed graduates are likely to be the most marginal achievers and may not even be able to perform as well as a majority of dropouts. Relative to nongraduates, the fact that the performance of graduates deteriorates with age seems to support this point. Furthermore, the types of occupations in which these people are likely to find employment do not tend to place a premium on formal education. Clearly, a high school dropout should have no trouble out-performing a marginal high school graduate.[1]

The 2SLS estimate of equation (4b) indicates that the wage rate is not significantly related to days worked in the post-unemployment period. It appears that the income and substitution effects may have balanced out, leaving no significant relationship between days worked and the wage rate. In general, the significant variables presented in Table A-4 are consistent with their hypothesized sign. Significant factors positively associated with days worked in the year following placement are being married, being white, being a veteran, the number of days worked in the period before unemployment, finding employment in a blue collar job, and living in the western United States. Significant factors negatively related to days worked in the period following placement are being a welfare client and living in a rural area. Being a male is also significantly associated with reduced work. This is

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[1]Alexander found that among low-income workers, specific firm experience was more important in determining income than was age. It may also be that among the low-income workers (disadvantaged), specific firm experience is also more important than a high school diploma. See Arthur J. Alexander, *Income, Experience, and the Structure of the Internal Labor Market*, P-4756, The Rand Corporation, Santa Monica, 1972, p. 18.

inconsistent with the original hypothesis. It appears that among the disadvantaged unemployed, women are more able to find jobs that provide stable employment. As a result, job agents will be expected to place women in more stable positions. Occupation is another important factor in determining economic behavior. Among the disadvantaged, blue collar workers tend to have less unemployment and work more days after placement than other workers. This probably reflects the fact that the disadvantaged are relegated to the most menial of white collar jobs.

The estimates for equation (4c) indicate that the two endogenous variables, days unemployed and days worked, are significant and, as expected, negatively associated with the post-unemployment wage rate. This is consistent with a decrease in the reservation wage as the individual's marginal utility of leisure and household asset position decrease over the period of unemployment. Furthermore, the results are consistent with employers paying a premium wage for short-term employment positions. The results also indicate that although being handicapped was not significant in determining unemployment or job stability, it is an important factor in determining the wage rate. The handicapped appear to earn substantially less than the non-handicapped. Conversly, although having vocational training did not help people find employment more quickly, it is a significant positive factor in determining the wage rate a person will receive. Likewise, union members earn significantly more than non-members. Welfare status is significant, as it has been in all equations. Being a welfare client has been associated with longer periods of unemployment, shorter work periods, and lower wages.

Previous work history is a significant factor in equation (4c). However, the negative sign on the 1967 day worked and 1967 wage rate variables does not represent the full effect that these variables have on the wage rate in the post-unemployment period. The 1967 income variable is, in effect, the interaction variable between these two factors. The net effect of having worked more or earned more in the period before unemployment is to increase the expected wage rate after

placement. However, the result for the 1967 unemployment is not so easily explained. This factor is significant but not consistent with the expected sign.

UPDATING THE ESTIMATES

If the model and estimates are to be used to estimate client income gain as the basis for paying job agents, it must be adjusted to account for changes over time and for misspecifications in the original model. These adjustments can take several forms. First, the entire model can be re-estimated as future "waves" of data on the IDP are published. Present plans are for 1972 to be the last year the IDP data are collected. For this reason, the State of California may want to initiate its own control group. Such data could be used to evaluate other manpower programs as well as the job agent program. These data would have the additional advantages of being California-specific and expressly designed to facilitate analysis of issues in which the State is particularly interested.

Second, the estimates of client income gain can be improved by analyzing the results and making appropriate adjustments. For example, the present model does not take into account such factors as local labor market conditions and the availability of program resources.

Unfortunately, there is no way at present to build an adjustment for these factors into the standards. However, it will be possible to do so after the incentive system has been in operation for about a year. It is a simple matter, for example, to determine whether there is a statistically significant relation between client income gains, as measured under the incentive system, and local labor market conditions or the availability of client resources. If a statistical relation does exist, a simple adjustment factor or weight can be calculated that will compensate for these factors. Such an adjustment would help to insure that a job agent's incentive payment would be based upon his relative success in servicing clients, not upon factors beyond his control. Similarly, it will be feasible to test if the standards for a particular class of clients are systematically set too high or too low. For example, if the model adequately captured the effects of marital status, there should not be a statistically significant difference in the

average reward associated with married clients as against single clients. If there is a significant difference, an appropriate adjustment should be made to the estimates of client income gain.

Finally, the statistical model is based on dollar values in the period 1967-1969. The explanatory variables relating to previous wage rate and income are in 1967 dollars. The projection of the expected wage rate in the period after placement is in terms of 1969 dollars. However, in practice 1971 wage and income figures will be put into the model, and the projection of the expected wage rate should be in terms of 1972 dollars. It is therefore necessary to deflate input dollars to their 1967 level and inflate projections of the post-unemployment wage rate to the 1972 level. Furthermore, the weights should also take into account that the general level of wages is higher in California than in the rest of the country.

The adjustment factors were developed using national average hourly earnings of production workers in manufacturing for 1967 and 1969[1] and the corresponding California data.[2] The deflation factor expressing 1971 dollars in terms of 1967 dollars is .71.[3] The inflation factor expressing 1969 dollars in terms of 1972 dollars is 1.29.[4] Similar factors should be developed for future years.

A WORD OF CAUTION

The model and estimates described above are consistent with general principles of benefit-cost analysis and utilize standard econometric techniques and a carefully constructed data base. However, the statistical model may still be misspecified, and many important exogenous variables may still be missing from the analysis. There are two major concerns in this area.

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[1] *Manpower Report of the President*, April 1971, Table C-6.

[2] *Earnings and Employment*, Vol. 18, March 1972, Table C-16.

[3] The deflation factor was derived as:

$$\frac{\text{US 67}}{\text{Calif 71}} = \frac{\$2.83 \text{ per hour}}{\$3.95 \text{ per hour}} = .71$$

[4] The inflation factor was derived as:

$$\frac{\text{Calif 72}}{\text{US 69}} = \frac{\$4.13 \text{ per hour}}{\$3.19 \text{ per hour}} = 1.29$$

First, fitting IDP data to the above model required several assumptions about the timing of the periods of employment and unemployment. Unemployment in 1968 was assumed to occur in a single period at the end of the year. Clearly, this may overstate the actual duration of the initial spell of unemployment. Moreover, the initial period of unemployment was assumed to end on the last day of 1968, and any unemployment occurring in 1969 was assumed to occur after some period of employment. This assumption may result in understating the initial period of unemployment. These assumptions were necessary if the employment situation during a standard follow-up period was to be estimated. These assumptions would be unnecessary if the actual time phasing of unemployment was known.

Second, many important variables may not have been included in the analysis, and the control group may not adequately reflect the specific client population. For example, the control group is composed of a representative cross-section of the disadvantaged unemployed in the United States. However, if the client population is composed of people with unique characteristics or special handicaps, the control group would not adequately reflect the client population in this important dimension. Although variables that reflect previous work history implicitly account for some of the effect of such special factors, it is not known to what extent projections of expected money income would be biased. Further improvement and extensions in the data base will be most helpful in improving the quality of the estimates and the projections of client income gain.

SUMMARY AND CONCLUSIONS

The evaluation of the job agent program or any manpower program is a difficult, costly, and time-consuming task. To a large extent this results from the need to set up unique control groups each time an evaluative study is undertaken. It has been shown in this appendix that a single national control group can be used as a standard in evaluating the job agent and numerous other manpower programs.

Basically, control groups are used as norms against which to measure the accomplishment of the program. For example, by observing

the behavior of people similar to program clients in the control group, it is possible to infer the client's behavior had he not seen the job agent. The IDP data fitted to the economic model presented above allows the estimation of employment situations a client could have expected had he not joined the program and consequently the calculation of his net income gain from participating in the program. In addition, the techniques presented allow interim incentive payments to the job agent when the client is placed, thereby eliminating the need for a substantial post-program follow-up period before any incentive payment and program evaluation can be made. Based upon the data and estimates presented, it appears that the technique is feasible and could become a valuable management and evaluative tool.

Appendix B

INPUT FORMS AND DEFINITIONS OF VARIABLES

There are three times that a job agent submits information on a client: when the client is first assigned to the agent, when the client is placed, and one year following placement. Forms for these purposes have been designed to convey the necessary information concisely, with a minimum of effort required from the job agent. However, if the incentive pay system is to be successful, the forms must be filled out conscientiously. It was decided to keep the forms simple and sparse, rather than clutter them with explanatory information. The purpose of this appendix is to elucidate the use of the input forms required of the job agent.

The initial intake form is shown as Exhibit B-1. It is the standard form filled out on new job agent clients and should, if possible, be completed by other than a job agent. Computer processing of this form results in an Initial Goals Report, such as the one shown as Exhibit C-1. Upon client placement, appropriate information about the placement is recorded in the space provided at the bottom of the Initial Goals Report and hence becomes the second set of input information collected on a client. One year after placement, the job agent submits information on the client's total income over the year; such information constitutes the third and final input and is written on the bottom of the Interim Report. (See Exhibit C-2.) Following the submission of each of the three intake forms, a report will be sent to the job agent; the report repeats the input data and provides additional information, such as goals and pay points. This information flow and the actual mechanics of the system are described in greater detail in Appendix C. The remainder of this appendix defines the variables used on the intake forms and shows how all of the inputs for a given client are recorded on one punched card. Job agents should find the definitions a particularly useful reference, although it is expected that they will learn the meanings rather quickly through practice.

State of California
Department of Human Resources Development

JOB AGENT INCENTIVE PAY INITIAL INTAKE REPORT

1. Client Name [ ] [ ] (Init. / Last)
2. Client SSA No. [ ]
3. Date Assigned to job agent [ ] (Mo. Day Yr.)
4. Field Office No. [ ]
5. Job Agent/CRP. No. [ ]
6. Today's date [ ] (Mo. Day Yr.)

Client Characteristics

7. ☐ Male
8. ☐ Married
9. ☐ Veteran
10. ☐ Vocational training
11. ☐ Physically handicapped
12. ☐ Welfare
13. ☐ High school dropout
14. ☐ Labor union
15. ☐ Blue collar last job
16. ☐ Rural area
17. ☐ Recent long-term unemployment
18. ☐ Spanish surname
19. ☐ White

20. [ ] Age
21. [ ] Family size
22. [ ] Number of cars in family
23. [ ] Days unemployed last year
24. [ ] Days worked last year
25. $[.] Hourly wage last job
26. [ ] Total income last year

Job Agent's Name [ ] [ ] (Init. / Last)

EXHIBIT B-1

DEFINITIONS ON INITIAL INTAKE FORM

Self-explanatory items are omitted.

Client name: Use just first initial and surname.

Date assigned to job agent: Write all dates as numbers, showing month, day, and year in that order.

Married: All items in the first column are to be answered by "1" or "0", according to whether or not the client has the characteristic. Thus, if the client is married, write "1"; otherwise (that is, single, widowed, divorced, separated, or spouse absent), write "0".

Vocational training: This is answered by asking of the client, "Have you had any training outside the regular school system, for example, an apprenticeship or a manpower training program?" (Yes = 1, no = 0.)

Physically handicapped: If uncertain, ask, "Do you have a physical or nervous condition that limits the type of work or the amount of work you can do?"

Welfare: If uncertain, ask, "Has your family received income from ADC, AFDC, or welfare in the last year?"

Labor union: Write "1" if client is now a member of a labor union.

Blue collar last job: Blue collar occupations are defined as (a) craftsmen, foremen, and kindred workers; (b) operatives and kindred workers; (c) laborers and service workers; (d) farm workers. If any of these, write "1"; otherwise (for example, professional or unskilled), write "0".

Rural area: Residence is 30 miles or more from the central city of a Standard Metropolitan Statistical Area, defined as a city of population greater than 50,000. In California, the cities exceeding 50,000 in population are Alameda, Alhambra, Anaheim, Bakersfield, Bellflower, Berkeley, Buena Park, Burbank, Carson, Chula Vista, Compton, Concord, Costa Mesa, Daly City, Downey, East Los Angeles, El Cajon, El Monte, Fremont, Fresno, Fullerton, Garden Grove, Glendale, Hawthorne, Hayward, Huntington Beach, Inglewood, Lakewood, Los Angeles, Modesto, Mountain View, Newport Beach, Norwalk, Oakland, Ontario, Orange, Oxnard, Palo Alto, Pasadena, Pico Rivera, Pomona, Redondo Beach, Redwood City,

Riverside, Sacramento, Salinas, San Bernardino, San Diego, San Francisco, San Jose, San Leandro, San Mateo, Santa Ana, Santa Barbara, Santa Clara, Santa Monica, Santa Rosa, Simi, South Gate, Stockton, Sunnyvale, Torrance, Vallejo, Ventura, West Covina, Westminster, and Whittier,

Recent long-term unemployment: This is answered by asking, "Within the last three years, have you been out of a job or on strike for two months or more at a time?"

Spanish surname: If client has a Spanish surname, then next item -- "white" -- is to be marked "0".

White: Determined solely by intake clerk, without inquiry or consultation. For the purposes of this form, Mexican and Puerto Rican are to be recorded as non-white ("0"), as are Negro, Oriental, American Indian, and so on.

Age: Refers to age at the time of becoming a job agent client.

Family size: Number of people in the family unit including the client.

Days unemployed last year: Days out of work and looking for employment, not to exceed 260 days. A week is considered 5 days (since the concern is with a normal work week), a year 260 days. "Year" means preceding 12 months, not necessarily last calendar year.

Days worked last year: Number of 8-hour days worked, not to exceed 260. If more or less than 8-hours average per day, adjust accordingly. Thus, full-time employment of 40 hours per week for a year is 260 days. Vacation, sick leave, and maternity leave are not included. This item plus the previous item do *not* have to add to 260, because of exclusions just noted, overtime, withdrawal from labor force, and so on.

Hourly wage last job: Record in dollars and cents. If client gives other than hourly wage, translate to hourly wage.

Client's total earnings last year: Record in dollars only. Must be earned income from labor; excludes welfare, gifts, loans, capital gains, and so on.

FOLLOW-UP DEFINITIONS

Date of placement: Month, day, and year that client begins a non-temporary job. "Temporary" is defined as "less than three weeks";

therefore, this information, written in at the bottom of the Initial Goals Report, cannot be submitted until the client has been on the job for three weeks. (Similarly, any job lasting three weeks or more is to be considered a placement.)

Weeks in training and/or temporary job: Record total, rounding to the nearest number of whole weeks.

Client's total first year earnings: Record the total number of dollars earned in all jobs in the year following placement. Do not include earnings from temporary jobs prior to placement.

INPUT PUNCHED CARD FOR JOB AGENT CLIENT REPORTING

	Card Columns	Field Width	Field Description	
Identification information	1-11	11	Client name (first initial and surname, no comma or space)	
	12-20	9	SSA #	
	21-26	6	Data assigned to Job Agent (mmddyy)	
	27-30	4	Field office #	
	31-32	2	Job Agent #	
Client characteristics	33	1	Male	Binary variables (1 = yes, 0 = no)
	34	1	Married	
	35	1	Veteran	
	36	1	Vocational training	
	37	1	Physically handicapped	
	38	1	Welfare	
	39	1	High school dropout	
	40	1	Labor union	
	41	1	Blue collar last job	
	42	1	Rural area	
	43	1	Recent long term unemployment	
	44	1	Spanish surname	
	45	1	White	
	46-47	2	Age	
	48-49	2	Family size	
	50	1	Number of cars in family	
	51-53	3	Days unemployed last year	
	54-56	3	Days worked last year	
	57-59	3	Hourly wage last job	
	60-63	4	Total earnings last year	
Placement information	64-69	6	Date of placement (mmddyy)	
	70	1	Blue collar placement (binary)	
	71-73	3	Hourly wage at placement	
	74-75	2	Weeks in training and/or temporary job	
Follow-up information	76-80	5	Total first year earnings	

All fields are entirely numeric, except the first which is alphabetic.

Appendix C

THE MECHANICS OF THE INFORMATION FLOW

To appreciate the job agent client information system, it is useful to trace a client through the entire evaluation period, from the time he is assigned to a job agent until one year after he is placed, and also to examine the aggregate processing required to calculate incentive pay for all job agents. Although the system is basically manual, this does not diminish the necessity for carefully specifying the steps to be taken and identifying the relationships of time and content that exist among these steps. It is recognized that HRD will want to make the final decisions about the details of operation; presented here is The Rand Corporation's view of the overall process.

INDIVIDUAL CLIENT CALCULATIONS

The reader is invited to review Table 2 in the text, which succinctly summarizes the following discussion. When a client is assigned to a job agent, an intake form is completed. This form has already been described and illustrated in Exhibit B-1. The completed form is sent to Sacramento, with a carbon copy retained in the local field office. A punched card is produced from this form, as described in Appendix B. Only the first 63 columns of this card are punched; they contain client identification and characteristics. This card is processed by a computer program whose output is the Initial Goals Report (see Exhibit C-1). Four copies of this report are produced; one remains in Sacramento (along with the punched card), two are for the job agent, and one is for the latter's supervisor.

The Initial Goals Report contains blanks at the bottom for placement information. Upon placement, the job agent fills in these blanks on one of his copies and sends the report to Sacramento. This information is keypunched in columns 64 through 75 of the aforementioned card. The card is run through another computer program, this time resulting in an Interim Report (see Exhibit C-2). Again, four copies are produced, and distributed as before.

INITIAL GOALS REPORT

1.	CLIENT	J DOE	4.	FIELD OFFICE NO.	1234
2.	SSA NO.	123-45-6789	5.	JOB AGENT NO.	56
3.	DATE ASSIGNED TO JOB AGENT	10-17-72	6.	REPORT DATE	10-25-72

CLIENT CHARACTERISTICS

7.	1	MALE	20.	26	AGE
8.	1	MARRIED	21.	7	FAMILY SIZE
9.	0	VETERAN	22.	1	NUMBER OF CARS IN FAMILY
10.	0	VOCATIONAL TRAINING	23.	35	DAYS UNEMPLOYED LAST YEAR
11.	0	PHYSICALLY HANDICAPPED	24.	200	DAYS WORKED LAST YEAR
12.	1	WELFARE	25.	1.95	HOURLY WAGE LAST JOB
13.	1	HIGH SCHOOL DROPOUT	26.	3120	TOTAL INCOME LAST YEAR
14.	0	LABOR UNION			
15.	1	BLUE COLLAR LAST JOB			
16.	0	RURAL AREA			
17.	0	RECENT LONG-TERM UNEMPLOYMENT			
18.	0	SPANISH SURNAME			
19.	0	WHITE			

MINIMUM GOALS	BLUE COLLAR PLACEMENT	NON-BLUE COLLAR PLACEMENT
I. DAYS UNEMPLOYED BEFORE PLACEMENT	29	38
II. HOURLY WAGE AT PLACEMENT	1.76	1.78
III. DAYS WORKED DURING YEAR AFTER PLACEMENT	206	124
IV. EARNINGS DURING YEAR AFTER PLACEMENT *IV = B * II X III*	2900	1765

PLACEMENT INFORMATION

DATE OF PLACEMENT _____

BLUE COLLAR PLACEMENT *YES = 1, NO = 0* _____

HOURLY WAGE AT PLACEMENT _____

WEEKS IN TRAINING AND/OR TEMPORARY JOB _____

JA 02 JOB AGENT INCENTIVE PAY - INITIAL GOALS REPORT

EXHIBIT C-1

INTERIM REPORT

1.	CLIENT	J DOE	4.	FIELD OFFICE NO.	1234
2.	SSA NO.	123-45-6789	5.	JOB AGENT NO.	56
3.	DATE ASSIGNED TO JOB AGENT	10-17-72	6.	REPORT DATE	11-21-72

I. LENGTH OF PERIOD UNTIL PLACEMENT
EXCLUDING TRAINING AND/OR TEMPORARY JOBS

A. ACTUAL --------- 19

B. INITIAL GOAL --- 29

II. HOURLY WAGE AT PLACEMENT

A. ACTUAL -------- 2.05

B. INITIAL GOAL -- 1.76

III. DAYS WORKED DURING YEAR AFTER PLACEMENT

A. INTERIM ESTIMATE --- 217

B. INITIAL GOAL ------- 206

IV. EARNINGS DURING YEAR AFTER PLACEMENT

A. INTERIM ESTIMATE -- 3558
B X IIA X IIIA

B. INITIAL GOAL ------ 2900

V. CALCULATION OF INTERIM PAYMENT POINTS

A. INTERIM CALCULATION OF BENEFITS FROM J.A. SERVICES -- 822
*IB - IA = D, IVA - IVB = E, B X D X IIA = F,
E + F = RESULT. IF NEGATIVE, MAKE ZERO*

TIMES

B. INTERIM POINT FACTOR ---- 1/3

EQUALS

C. INTERIM PAYMENT POINTS -- 274

FINAL INPUT: TOTAL INCOME DURING YEAR AFTER PLACEMENT _____

CLIENT ADDRESS AND PHONE

EMPLOYER NAME, ADDRESS, AND PHONE

JA 03 JOB AGENT INCENTIVE PAY - INTERIM REPORT

EXHIBIT C-2

One year after placement, a notice is sent to the job agent requesting him to return one of his copies of the Interim Report, with information filled in at the bottom on his client's earnings over the year and the address of the client and his employer.[1] When this Report is returned, the income information is punched into the last five columns of the card and a computer program prepares a Final Report (see Exhibit C-3). Three copies of the Final Report are produced, one each for the central HRD office, the job agent, and the job agent's supervisor.

The three computer programs are actually combined into one; the report produced for a given punched card depends upon where the card is put in the program's input deck. It is anticipated that input cards will be accumulated and the program run once a week with all the cards received that week. This represents an efficient use of the computer; such a run should take only a few minutes to produce hundreds of reports. Allowing for key punch and turnaround, job agents should still receive feedback reports in a timely manner.

If any report is incorrect -- for whatever reason -- the job agent is to return it with an annotation describing the error(s). The punched card will be corrected accordingly, and processed on the next weekly run. Lost reports can be similarly reproduced.

The program is written in ANS 2 COBOL, which is the HRD standard. One input card per client (rather than three) was chosen for compactness and simplicity, but HRD might find it more convenient to use a different card for each of the reports. A technical description of the program and the program itself appear at the end of this appendix. The regression equations used in the program are given in Appendix A. All other calculations are simple and self-explanatory.

QUARTERLY CALCULATION OF INCENTIVE PAY

The basic method of translating pay points into incentive pay is described in Section IV. An example is presented here in order to

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[1] The responsibility for sending this notification at the correct time (one year after placement) rests with the human(s) monitoring the system. Although a program could easily be written that would scan all cards and automatically prepare notices for the proper ones, the size of the job agent program does not seem sufficiently large to warrant the cost.

FINAL REPORT

1.	CLIENT	J DOE	4.	FIELD OFFICE NO.	1234
2.	SSA NO.	123-45-6789	5.	JOB AGENT NO.	56
3.	DATE ASSIGNED TO JOB AGENT	10-17-72	6.	REPORT DATE	12-18-73

I. LENGTH OF PERIOD UNTIL PLACEMENT
EXCLUDING TRAINING AND/OR TEMPORARY JOBS

A. ACTUAL --------- 19

B. INITIAL GOAL --- 29

II. HOURLY WAGE AT PLACEMENT

A. ACTUAL -------- 2.05

B. INITIAL GOAL -- 1.76

III. EARNINGS DURING YEAR AFTER PLACEMENT

A. ACTUAL -------- 3360

B. INITIAL GOAL -- 2900

IV. CALCULATION OF FINAL PAYMENT POINTS

A. FINAL CALCULATION OF BENEFITS FROM J.A. SERVICES -- 624
*IB - IA = D, IIIA - IIIB = E, B X D X IIA = F,
E + F = RESULT. IF NEGATIVE, MAKE ZERO*

LESS

B. INTERIM PAYMENT POINTS -- 274

EQUALS

C. FINAL PAYMENT POINTS ---- 350
IF NEGATIVE, MAKE ZERO

illustrate the details. It is anticipated that HRD will do the calculation manually, since it is quite simple and is only done quarterly. Of course, it can be readily automated if so desired.

Incentive pay points are calculated by computer each week. Sets of the Interim and Final Reports showing these points are retained by the Department. A manual record should be maintained that shows how many pay points are earned by each job agent each week. At the end of the quarter, the points are totaled for each job agent.[1] Alternatively, the entire addition at the end of the quarter can be done by looking back at all the computer reports produced during the quarter, without the necessity of recording weekly amounts. In either case, the end result is a list of job agents, showing the total number of incentive pay points that each produced during the quarter.

Consider an example in which there are seven job agents, identified by the numbers 11 through 17. (In actuality, there are over 100 job agents, each identified by a four-digit field office number and a two-digit job agent number within the office.) Construct a table in which the job agents are listed in order of increasing number of incentive pay points earned in the quarter. Table C-1 shows such a table for our example, constructed in accordance with the following rules.

Divide the job agents who earn incentive pay points equally into five incentive pay classes, A through E. If the number of job agents is not evenly divisible by five, put the "borderline" cases in the higher of the two classes ("higher" meaning the letter nearer the end of the alphabet). In our example, one job agent is put into class A, one into B, two into C, one into D, and two into E. If any job agents tie in the number of points, make certain they are in the same class, moving the lower one to the next higher class if necessary. If there are any job agents with no incentive points, they should also be put into class A.

Next, fill in the columns labeled "salary step class" and "monthly base pay." This information is already known about job agents, although

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[1] During the first year the incentive pay plan is in operation, pay points will be summed at the end of each six month period, rather than each quarter.

Table C-1

ILLUSTRATION OF QUARTERLY INCENTIVE PAY CALCULATION

Job Agent Number	Total Pay Points	Incentive Pay Class	Salary Step Class	Monthly Base Pay	Total Monthly Salary	Monthly Incentive Pay	Quarterly Incentive Pay
14	219	A	2	928	928	0	0
12	1,386	B	3*	1,074	1,074	0	0
17	2,415	C	3	974	1,071	97	291
15	4,167	C	1	884	972	88	264
11	5,309	D	3	974	1,120	136	408
13	7,088	E	3*	1,074	1,169	95	285
16	9,252	E	2	928	1,114	186	558

*Base pay is currently above that for Step 3 (see Column A, Table 1).

it should be reiterated that a new pay schedule will be in effect (See Table 1 in the text.) The monthly base pay is given in Column A of Table 1, except for 14 job agents -- referred to as "exceptional job agents" -- who are currently paid more than the amount of base pay shown under the proposed maximum salary step (Step 3). For these job agents, an asterisk appears in the "salary step class" column and their current salary appears in the "monthly base pay" column. "Total monthly salary" can now be read directly from Table 1, simply by referring to incentive pay class and salary step class. If the entry in Table 1 is less than an exceptional job agent's base pay, then his "total monthly salary" shall be the same as the base pay. Job agent 12 is an example of such an exception.

"Monthly incentive pay" is now calculated as "total monthly salary" minus "monthly base pay." As a check, it will be seen that, but for exceptional job agents, "monthly incentive pay" is 0, 5, 10, 15, or 20 percent of "monthly base pay," according to whether an agent is in class A, B, C, D, or E respectively. Finally, calculate "quarterly incentive pay" as three times monthly incentive pay.[1]

THE COMPUTER PROGRAM

Rand has provided a computer program that takes as input the punched card described in Appendix B and produces as output the three reports illustrated in Appendix C. The program is written in ANS 2 COBOL, the HRD standard. The cards following the program are example inputs that cause the program to produce the three sample reports previously shown. The program is straightforward and can be comprehended and modified by referring to the flow chart, the listing, and the following description.

The input consists of any number of client information cards, the format of which has been previously described. Each such card results in one page of output, such a page being one of three report types or

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[1]Note that during the first year the incentive plan is in operation, incentive pay will be calculated over a six month period, requiring this latter factor to be six. For the first year, replace "quarter" with "six-month period" in the preceding instructions.

identification followed by an error message indicating why the report for that particular card could not be produced. Cards that are to produce Initial Goals Reports are put behind a parameter-card that is punched only with a "1" in column 1; such input cards will normally be punched only in columns 1-63. Similarly, cards that are to produce Interim Reports are punched in columns 1-75 and follow a parameter-card that has a "2" in column 1. Cards producing Final Reports are punched in their entirety and follow a parameter-card with a "3" in column 1. Input cards may be in any order, with the types freely intermixed; the report-type that is given as the first column of a parameter-card remains in effect until a new parameter-card is encountered. The program distinguishes parameter-cards from client input cards according to whether or not column 1 contains a "1", "2", or "3". (Client cards are alphabetic in the first position.) The default report-type is 1 (Initial Goals Report); hence, if a parameter-card does not appear as the first input card, Initial Goals Reports will be produced until the program encounters a contrary parameter-card, if any. It is useful to trace through the flow chart and program for each report-type, with and without data input errors.

The program does extensive checking and editing of the input data, except for the first 32 columns, which represent identification information and in general cannot be internally verified; however, a check is made to insure that the "data assigned to job agent" is on or after July 1, 1972, the beginning of the incentive pay program. Job agents should fill in this date for clients assigned to them before this time.

Many fields must lie within certain limits, as indicated in various COBOL statements. For example, each binary client characteristic ("male" through "white") must be blank or "0" or "1". (Blank may be used throughout in place of "0".) Other characteristics are also constrained: for example, "days unemployed last year" cannot exceed 260, the full work-year of 52 weeks of 5 days each. If any constraints are violated, the program will produce an error message, and the report will not be completed. Internally, ERROR-1 represents an error in the first 63 columns of the card; that is, the information that is used to produce the Initial Goals Report. Similarly, ERROR-2 refers to columns 64-75,

and ERROR-3 to 76-80. The ERRORs are set to 0 before the card is scanned and are individually set to 1 when an error of that type is detected. A completed report can be produced only from an error-free card.

Likewise, there are constraints on the output, although this is not the concern of the job agent. For example, it is possible for the hourly wage regression equation to produce an initial goal that is less than the hourly minimum wage of $1.60; should this happen, the program will set the goal to $1.60. There are other reasonable limits on minimum and maximum number of days, which can be ascertained by examining the program. The job agent is always given the benefit in rounding results; thus, when "days unemployed" as computed by the regression is not a whole number (which is usually the case), it is rounded up. The program does this by adding .9999 and then truncating. Other goals are rounded down by simple truncation. Point values that are not integral are rounded up.

The program computes four regression equations, one each for the three initial goals of days unemployed, hourly wage, and days worked, and one for interim estimate of days worked. The coefficients for the regressions are given in four tables near the beginning of the Working Storage Section, immediately following the table that stores client characteristics. Each of these tables is indexed from 7 to 29 or 30, 7 to 26 corresponding to the numbering of the characteristics on the Initial Intake Form. Positions 1 to 6 are not referenced by the program. Positions 27 and 28 are derived values, age-squared and age-times-high-school-dropout; however, age-squared does not appear in the current version of the program, evidenced by the fact that the 27th entry in each coefficient table is 0. Position 29 is blue-collar-placement, and 30 is hourly-wage-at-placement (used only in the interim-estimate-days-worked regression). Each of the regressions is actually carried out using a PERFORM statement in conjunction with one of the last two sections of the program. Corresponding entries from the characteristics table and the appropriate coefficient table are multiplied together and added to the running sum that has been initialized by the appropriate intercept. Should HRD wish to use their own regression coefficients (as obtained, for example, by an analysis of their

own data), they need change only the four coefficient tables, together with the intercepts that appear at the beginning of the Working Storage Section. These intercepts are actually the regression intercepts plus the corresponding "Western states" coefficients that appear in Appendix A; these quantities are combined, since all clients live in the West.

As the minimum wage changes through legislation, HRD may want to change this parameter, which appears near the beginning of Working Storage. As noted previously, this parameter insures that a goal for a client will never be less than the prevailing minimum wage. Likewise, it is recommended that HRD change the values of CA72 and CA71 each year (as soon as they are known) to reflect the average hourly wage in California on January 1 of that year and the preceding year; however, the names should remain the same unless HRD desires to modify their usage in the program accordingly. The values of US67 and US69 need not be changed. The purpose of using these historical wage rates is to allow for inflation; that is, the program corrects present and immediately past wages to equivalent wages in the 1967-69 period to which the regressions directly apply, runs the regressions, and reconverts the results to current wages. BACKWARD-FACTOR and FORWARD-FACTOR are used in these conversions.

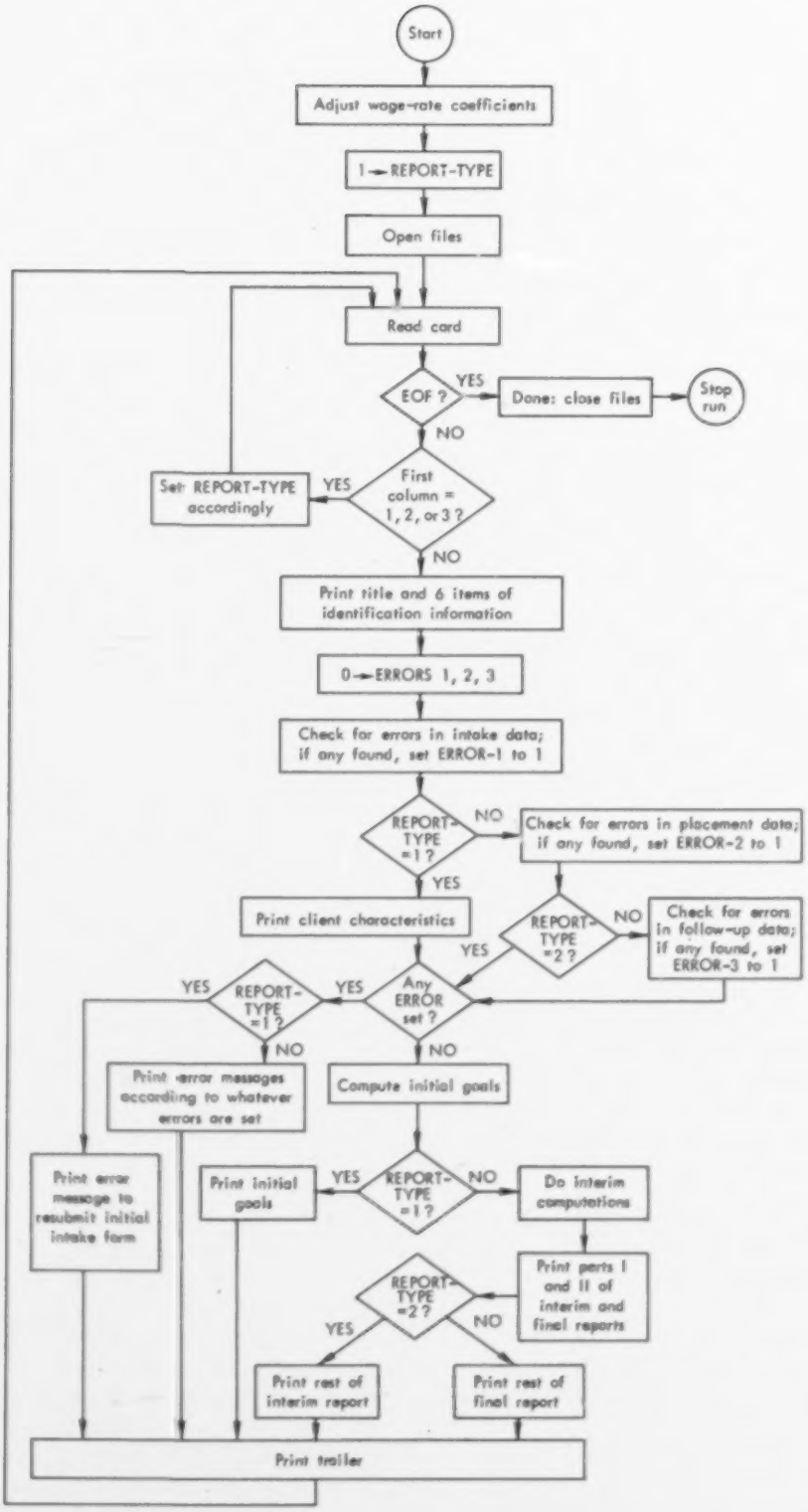
JULIAN-ASSIGN and JULIAN-PLACE refer to the Julian dates of assignment to job agent and of placement, respectively, where 1 July 1972 (the projected starting date of the incentive pay program) is arbitrarily taken to be 0. The formulas represented in the associated COMPUTE statements need slight modification if the program is to be used after 29 February 1976. MOD-JULIAN-ASSIGN and MOD-JULIAN-PLACE, derived from JULIAN-ASSIGN and JULIAN-PLACE respectively, refer to a Julian enumeration in which Saturdays and Sundays are not counted. These are the numbers actually used in the computations in accordance with the five day week that is consistently used in the study.

Much of the Working Storage Section is taken up with images of output lines. These lines are labeled in a straightforward manner: for example, ALL-1 refers to the first line of all three reports, IGR-10 to the 10th line of the Initial Goals Report, and IR-FR-11 to the 11th line of both the Interim Report and the Final Report.

Although the output-record definition is for a 132-character print-line, the actual printing is confined to positions 9 through 77; this arbitrary restriction permits the reports to fit centered on a standard 8-1/2" x 11" page. HRD may want to widen the reports, although the present formatting seems workable.

Paragraph names generally correspond to the flow chart. In cases for which names would have little intrinsic content, paragraphs are given names such as L-10.

Every effort has been made to have the program conform to strict ANS COBOL as requested by HRD; with the exception of the use of CURRENT-DATE, no IBM extensions to ANS COBOL are used. In particular, this restriction prevents the use of COMPUTATIONAL (floating-point) items. In the interest of efficiency, HRD may want to modify the program to incorporate COMPUTATIONAL items; however, the relatively low volume of job agent client report processing may not warrant such an effort.



Job Agent Program Flow Chart

COBOL SOURCE PROGRAM LISTING

```
//JOB CARD (THIS CARD AND THE NEXT TWO SHOULD BEGIN IN COLUMN 1)
// EXEC ACOBCLG
//COBOL.SYSIN DD *

IDENTIFICATION DIVISION.

PROGRAM-ID.             JOBAGENT.
AUTHOR.                 RAND CORPORATION.
DATE-WRITTEN.           MAY 1972.

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.
SOURCE-COMPUTER.        IBM-360.
OBJECT-COMPUTER.        IBM-360.
SPECIAL-NAMES.          C01 IS PAGING.

INPUT-OUTPUT SECTION.
FILE-CONTROL.
    SELECT CARD     ASSIGN TO UT-S-SYSIN.
    SELECT LISTING ASSIGN TO UT-S-SYSPRINT.

DATA DIVISION.

FILE SECTION.

FD  CARD
    RECORD          80 CHARACTERS
    LABEL RECORDS OMITTED
    DATA RECORD     CARD-IMAGE.

01  CARD-IMAGE.
    02  TYPE-OR-CLIENT-INITIAL          PICTURE X(1).
    02  CLIENT-SURNAME                  PICTURE X(10).
    02  SSA1                            PICTURE X(3).
    02  SSA2                            PICTURE X(2).
    02  SSA3                            PICTURE X(4).
    02  DATE-ASSIGNED-MONTH             PICTURE X(2).
    02  DATE-ASSIGNED-DAY               PICTURE X(2).
    02  DATE-ASSIGNED-YEAR              PICTURE X(2).
    02  FIELD-OFFICE-NUMBER             PICTURE X(4).
    02  JOB-AGENT-NUMBER                PICTURE X(2).
    02  MALE                            PICTURE X(1).
    02  MARRIED                         PICTURE X(1).
    02  VETERAN                         PICTURE X(1).
    02  VOCATIONAL-TRAINING             PICTURE X(1).
    02  PHYSICALLY-HANDICAPPED          PICTURE X(1).
    02  WELFARE                         PICTURE X(1).
    02  HIGH-SCHOOL-DROPOUT             PICTURE X(1).
    02  LABOR-UNION                     PICTURE X(1).
    02  BLUE-COLLAR-LAST-JOB            PICTURE X(1).
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    02  RURAL-AREA                          PICTURE X(1).
    02  RECENT-LONG-TERM-UNEMPLOYMENT       PICTURE X(1).
    02  SPANISH-SURNAME                     PICTURE X(1).
    02  WHITE                               PICTURE X(1).
    02  AGE                                 PICTURE X(2).
    02  FAMILY-SIZE                         PICTURE X(2).
    02  NUMBER-OF-CARS-IN-FAMILY            PICTURE X(1).
    02  DAYS-UNEMPLOYED-LAST-YEAR           PICTURE X(3).
    02  DAYS-WORKED-LAST-YEAR               PICTURE X(3).
    02  HOURLY-WAGE-LAST-JOB                PICTURE X(3).
    02  TOTAL-INCOME-LAST-YEAR              PICTURE X(4).
    02  PLACEMENT-DATE-MONTH                PICTURE X(2).
    02  PLACEMENT-DATE-DAY                  PICTURE X(2).
    02  PLACEMENT-DATE-YEAR                 PICTURE X(2).
    02  BLUE-COLLAR-PLACEMENT               PICTURE X(1).
    02  HOURLY-WAGE-AT-PLACEMENT            PICTURE X(3).
    02  WEEKS-IN-TRAINING-OR-TEMP-JOB       PICTURE X(2).
    02  TOTAL-FIRST-YEAR-INCOME             PICTURE X(5).

FD  LISTING
    LABEL RECORDS OMITTED
    DATA RECORD   PRINT-LINE
    BLOCK         10 RECORDS
    RECORD        133 CHARACTERS.

01  PRINT-LINE.
    02  CC          PICTURE X.
    02  PRINT-DATA  PICTURE X(132).

WORKING-STORAGE SECTION.

77  DAYS-UNEMPLOYED-INTERCEPT   PICTURE 9(5)V9(7)  VALUE 147.678.
77  HOURLY-WAGE-INTERCEPT       PICTURE 9(5)V9(7)  VALUE 144.636.
77  DAYS-WORKED-INTERCEPT       PICTURE 9(5)V9(7)  VALUE 130.401.
77  I-E-DAYS-WORKED-INTERCEPT   PICTURE 9(5)V9(7)  VALUE 133.283.
77  MINIMUM-WAGE                PICTURE 9V99       VALUE 1.60.
77  CA71                        PICTURE 9V99       VALUE 3.95.
77  CA72                        PICTURE 9V99       VALUE 4.13.
77  US67                        PICTURE 9V99       VALUE 2.83.
77  US69                        PICTURE 9V99       VALUE 3.19.
77  BACKWARD-FACTOR             PICTURE 9V9(7).
77  FORWARD-FACTOR              PICTURE 9V9(7).
77  REPORT-TYPE                 PICTURE 9.
77  ERROR-1                     PICTURE 9.
77  ERROR-2                     PICTURE 9.
77  ERROR-3                     PICTURE 9.
77  MONTH                       PICTURE 99.
77  DAY                         PICTURE 99.
77  YEAR                        PICTURE 99.
77  TEMP                        PICTURE S9(4).
77  DAY-OF-YEAR                 PICTURE 9(3).
77  JULIAN-ASSIGN               PICTURE 9(4).
77  MOD-JULIAN-ASSIGN           PICTURE 9(4).
77  JULIAN-PLACE                PICTURE 9(4).
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77  MID-JULIAN-PLACE                PICTURE 9(4).
77  SPACING                         PICTURE 99.
77  GOAL-DAYS-UNEMPLOYED-NON-BLUE PICTURE 999.
77  GOAL-DAYS-UNEMPLOYED-BLUE      PICTURE 999.
77  GOAL-HOURLY-WAGE-NON-BLUE      PICTURE 9V99.
77  GOAL-HOURLY-WAGE-BLUE          PICTURE 9V99.
77  GOAL-DAYS-WORKED-NON-BLUE      PICTURE 999.
77  GOAL-DAYS-WORKED-BLUE          PICTURE 999.
77  INTERIM-ESTIMATE-DAYS-WORKED PICTURE 999.
77  GOAL-FIRST-YEAR-INCOME-NON-BLU PICTURE 9(5).
77  GOAL-FIRST-YEAR-INCOME-BLUE PICTURE 9(5).
77  XR                              PICTURE 99.
77  DU-NB                           PICTURE S9(5)V9(7).
77  DU-B                            PICTURE S9(5)V9(7).
77  HW-NB                           PICTURE S9(5)V9(7).
77  HW-B                            PICTURE S9(5)V9(7).
77  DW-NB                           PICTURE S9(5)V9(7).
77  DW-B                            PICTURE S9(5)V9(7).
77  IFDW                            PICTURE S9(5)V9(7).
77  ACTUAL-DAYS-UNEMPLOYED          PICTURE 9(3).
77  ACTUAL-FIRST-YEAR-INCOME        PICTURE 9(5).
77  GOAL-DAYS-UNEMPLOYED            PICTURE 9(3).
77  GOAL-HOURLY-WAGE                PICTURE 9V99.
77  GOAL-DAYS-WORKED                PICTURE 9(3).
77  INTERIM-EST-FIRST-YEAR-INCOME PICTURE 9(5).
77  GOAL-FIRST-YEAR-INCOME          PICTURE 9(5).
77  D                               PICTURE S9(3).
77  E                               PICTURE S9(5).
77  F                               PICTURE S9(5)V9(7).
77  INTERIM-BENEFIT                 PICTURE 9(5).
77  INTERIM-PAYMENT-POINTS          PICTURE 9(5).
77  FINAL-BENEFIT                   PICTURE 9(5).
77  FINAL-PAYMENT-POINTS            PICTURE 9(5).

01  CLIENT-CHARACTERISTICS-TABLE SYNC.
    02  FILLER                              PICTURE X(24) VALUE SPACES.
    02  7-MALE                              PICTURE 9(4).
    02  8-MARRIED                           PICTURE 9(4).
    02  9-VETERAN                           PICTURE 9(4).
    02  10-VOCATIONAL-TRAINING              PICTURE 9(4).
    02  11-PHYSICALLY-HANDICAPPED           PICTURE 9(4).
    02  12-WELFARE                          PICTURE 9(4).
    02  13-HIGH-SCHOOL-DROPOUT              PICTURE 9(4).
    02  14-LABOR-UNION                      PICTURE 9(4).
    02  15-BLUE-COLLAR-LAST-JOB             PICTURE 9(4).
    02  16-RURAL-AREA                       PICTURE 9(4).
    02  17-RECENT-LONG-TERM-UNEMP           PICTURE 9(4).
    02  18-SPANISH-SURNAME                  PICTURE 9(4).
    02  19-WHITE                            PICTURE 9(4).
    02  20-AGE                              PICTURE 9(4).
    02  21-FAMILY-SIZE                      PICTURE 9(4).
    02  22-NUMBER-OF-CARS-IN-FAMILY         PICTURE 9(4).
    02  23-DAYS-UNEMPLOYED-LAST-YEAR        PICTURE 9(4).
    02  24-DAYS-WORKED-LAST-YEAR            PICTURE 9(4).
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    02  25-HOURLY-WAGE-LAST-JOB          PICTURE 9(4).
    02  26-TOTAL-INCOME-LAST-YEAR        PICTURE 9(4).
    02  27-AGE-SQUARED                   PICTURE 9(4).
    02  28-AGE-TIMES-HS-DROPOUT          PICTURE 9(4).
    02  29-BLUE-COLLAR-PLACEMENT         PICTURE 9(4).
    02  30-HOURLY-WAGE-AT-PLACEMENT      PICTURE 9(4).
01  CLIENT-CHARACTER REDEFINES CLIENT-CHARACTERISTICS-TABLE SYNC.
    02  CLIENT-CHAR PICTURE 9(4) OCCURS 30 TIMES.

01  DAYS-UNEMPLOYED-COEF-TABLE SYNC.
    02  FILLER          PICTURE  X(72)      VALUE SPACES.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -8.3331.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -60.154.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -15.246.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +34.109.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -21.392.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +9.6329.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +29.304.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -14.997.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -20.871.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +24.986.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +16.167.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -3.6223.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -33.943.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +2.1711.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -4.1477.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -13.913.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       +.061488.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       -.34196.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -16.788.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       +.011345.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +0.0.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       -.32448.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -9.8772.
01  DAI                 REDEFINES DAYS-UNEMPLOYED-COEF-TABLE SYNC.
    02  DAYS-UNEMPLOYED-COEF  PICTURE S9(5)V9(7) OCCURS 29 TIMES.

01  HOURLY-WAGE-COEF-TABLE SYNC.
    02  FILLER          PICTURE  X(72)      VALUE SPACES.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -17.582.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +12.915.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -18.964.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +83.642.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -80.139.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -83.798.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -6.5703.
    02  FILLER          PICTURE S9(5)V9(7) VALUE    +116.27.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +78.606.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -5.6275.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -5.1063.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -13.143.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -69.461.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       -.93449.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       -.88552.
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    02  FILLER          PICTURE S9(5)V9(7) VALUE      +3.0161.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       +.42802.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       -.57579.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -26.435.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       +.043047.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +0.0.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +3.0142.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -1.7836.
01  HW                  REDEFINES HOURLY-WAGE-COEF-TABLE SYNC.
    02  HOURLY-WAGE-COEF       PICTURE S9(5)V9(7) OCCURS 29 TIMES.

01  DAYS-WORKED-COEF-TABLE SYNC.
    02  FILLER          PICTURE  X(72)      VALUE SPACES.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -51.383.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +71.350.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +39.055.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -8.0195.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +10.813.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -50.572.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +10.901.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -6.7927.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -20.837.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -27.486.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -6.9750.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -19.840.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +94.478.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       -.29622.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +3.4573.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       +.89631.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       -.052251.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       +.25603.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +8.5877.
    02  FILLER          PICTURE S9(5)V9(7) VALUE       -.0040507.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +0.0.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -1.3399.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +81.746.
01  DW                  REDEFINES DAYS-WORKED-COEF-TABLE SYNC.
    02  DAYS-WORKED-COEF       PICTURE S9(5)V9(7) OCCURS 29 TIMES.

01  I-E-DAYS-WORKED-COEF-TABLE SYNC.
    02  FILLER          PICTURE  X(72)      VALUE SPACES.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -50.435.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +73.213.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +38.968.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +0.0.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +1.9996.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -57.353.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +14.195.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +0.0.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +0.0.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -31.009.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -7.2058.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -19.384.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +90.205.
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    02  FILLER          PICTURE S9(5)V9(7) VALUE      -.17795.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +3.5995.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +0.0.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -.037380.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      +.18292.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +0.0.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +0.0.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     +0.0.
    02  FILLER          PICTURE S9(5)V9(7) VALUE     -1.3179.
    02  FILLER          PICTURE S9(5)V9(7) VALUE    +83.259.
    02  FILLER          PICTURE S9(5)V9(7) VALUE      -.055707.
01  IE-DW               REDEFINES I-E-DAYS-WORKED-COEF-TABLE SYNC.
    02  I-E-DAYS-WORKED-COEF  PICTURE S9(5)V9(7) OCCURS 30 TIMES.

01  ALL-1.
    02  FILLER  PICTURE X(33) VALUE SPACES.
    02  TITLE   PICTURE X(20).
    02  FILLER  PICTURE X(80) VALUE SPACES.

01  ALL-3.
    02  FILLER  PICTURE X(10) VALUE SPACES.
    02  FILLER  PICTURE X(20) VALUE '1.  CLIENT          '.
    02  INITIAL PICTURE X.
    02  FILLER  PICTURE X VALUE SPACE.
    02  SURNAME PICTURE X(10).
    02  FILLER  PICTURE X(5) VALUE SPACES.
    02  FILLER  PICTURE X(23) VALUE '4.  FIELD OFFICE NO.   '.
    02  FIELD-O PICTURE X(4).
    02  FILLER  PICTURE X(59) VALUE SPACES.

01  ALL-5.
    02  FILLER  PICTURE X(10) VALUE SPACES.
    02  FILLER  PICTURE X(20) VALUE '2.  SSA NO.         '.
    02  SSA-1   PICTURE X(3).
    02  FILLER  PICTURE X VALUE '-'.
    02  SSA-2   PICTURE X(2).
    02  FILLER  PICTURE X VALUE '-'.
    02  SSA-3   PICTURE X(4).
    02  FILLER  PICTURE X(6) VALUE SPACES.
    02  FILLER  PICTURE X(23) VALUE '5.  JOB AGENT NO.'.
    02  JA-NO   PICTURE X(2).
    02  FILLER  PICTURE X(61) VALUE SPACES.

01  ALL-7.
    02  FILLER  PICTURE X(10) VALUE SPACES.
    02  FILLER PICTURE X(20) VALUE '3.  DATE ASSIGNED   '.
    02  DATEA-M PICTURE X(2).
    02  FILLER  PICTURE X VALUE '-'.
    02  DATEA-D PICTURE X(2).
    02  FILLER  PICTURE X VALUE '-'.
    02  DATEA-Y PICTURE X(2).
    02  FILLER  PICTURE X(9) VALUE SPACES.
    02  FILLER  PICTURE X(23) VALUE '6.  REPORT DATE        '.
    02  REPORT-DATE  PICTURE X(8).
    02  FILLER  PICTURE X(55) VALUE SPACES.
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01  ALL-8.
    02  FILLER PICTURE X(14) VALUE SPACES.
    02  FILLER PICTURE X(119) VALUE 'TO JOB AGENT'.

01  TOO-EARLY-ERROR-MESSAGE.
    02  FILLER PICTURE X(13) VALUE SPACES.
    02  FILLER PICTURE X(120) VALUE '*** DATE ASSIGNED TO JOB AGE
-       'NT MUST BE AFTER 7-1-72'.

01  IGR-10.
    02  FILLER PICTURE X(24) VALUE SPACES.
    02  FILLER PICTURE X(109) VALUE 'CLIENT CHARACTERISTICS'.

01  IGR-12.
    02  FILLER PICTURE X(14) VALUE '          7.  '.
    02  P-7    PICTURE X.
    02  FILLER PICTURE X(27) VALUE '  MALE                    '.
    02  FILLER PICTURE X(7)  VALUE '20.    '.
    02  P-20   PICTURE X(2).
    02  FILLER PICTURE X(82) VALUE '  AGE'.

01  IGR-14.
    02  FILLER PICTURE X(14) VALUE '          8.  '.
    02  P-8    PICTURE X.
    02  FILLER PICTURE X(27) VALUE '  MARRIED                 '.
    02  FILLER PICTURE X(7)  VALUE '21.    '.
    02  P-21   PICTURE X(2).
    02  FILLER PICTURE X(82) VALUE '  FAMILY SIZE'.

01  IGR-16.
    02  FILLER PICTURE X(14) VALUE '          9.  '.
    02  P-9    PICTURE X.
    02  FILLER PICTURE X(27) VALUE '  VETERAN                 '.
    02  FILLER PICTURE X(8)  VALUE '22.     '.
    02  P-22   PICTURE X(1).
    02  FILLER PICTURE X(82) VALUE '  NUMBER OF CARS IN FAMILY'.

01  IGR-18.
    02  FILLER PICTURE X(14) VALUE '         10.  '.
    02  P-10   PICTURE X.
    02  FILLER PICTURE X(27) VALUE '  VOCATIONAL TRAINING     '.
    02  FILLER PICTURE X(6)  VALUE '23.   '.
    02  P-23   PICTURE X(3).
    02  FILLER PICTURE X(82) VALUE '  DAYS UNEMPLOYED LAST YEAR'.

01  IGR-20.
    02  FILLER PICTURE X(14) VALUE '         11.  '.
    02  P-11   PICTURE X.
    02  FILLER PICTURE X(27) VALUE '  PHYSICALLY HANDICAPPED  '.
    02  FILLER PICTURE X(6)  VALUE '24.   '.
    02  P-24   PICTURE X(3).
    02  FILLER PICTURE X(82) VALUE '  DAYS WORKED LAST YEAR'.
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01  IGR-22.
    02  FILLER PICTURE X(14) VALUE '          12.  '.
    02  P-12   PICTURE X.
    02  FILLER PICTURE X(27) VALUE '  WELFARE                   '.
    02  FILLER PICTURE X(5)  VALUE '25.  '.
    02  P-25   PICTURE 9.99.
    02  FILLER PICTURE X(82) VALUE '  HOURLY WAGE LAST JOB'.

01  IGR-24.
    02  FILLER PICTURE X(14) VALUE '          13.  '.
    02  P-13   PICTURE X.
    02  FILLER PICTURE X(27) VALUE '  HIGH SCHOOL DROPOUT       '.
    02  FILLER PICTURE X(5)  VALUE '26.  '.
    02  P-26   PICTURE X(4).
    02  FILLER PICTURE X(82) VALUE '  TOTAL INCOME LAST YEAR'.

01  IGR-26.
    02  FILLER PICTURE X(14) VALUE '          14.  '.
    02  P-14   PICTURE X.
    02  FILLER PICTURE X(118) VALUE '  LABOR UNION'.

01  IGR-28.
    02  FILLER PICTURE X(14) VALUE '          15.  '.
    02  P-15   PICTURE X.
    02  FILLER PICTURE X(118) VALUE '  BLUE COLLAR LAST JOB'.

01  IGR-30.
    02  FILLER PICTURE X(14) VALUE '          16.  '.
    02  P-16   PICTURE X.
    02  FILLER PICTURE X(118) VALUE '  RURAL AREA'.

01  IGR-32.
    02  FILLER PICTURE X(14) VALUE '          17.  '.
    02  P-17   PICTURE X.
    02  FILLER PICTURE X(118) VALUE '  RECENT LONG-TERM UNEMPLOYM
-       'ENT'.

01  IGR-34.
    02  FILLER PICTURE X(14) VALUE '          18.  '.
    02  P-18   PICTURE X.
    02  FILLER PICTURE X(118) VALUE '  SPANISH SURNAME'.

01  IGR-36.
    02  FILLER PICTURE X(14) VALUE '          19.  '.
    02  P-19   PICTURE X.
    02  FILLER PICTURE X(118) VALUE '  WHITE'.

01  IGR-37.
    02  FILLER PICTURE X(58) VALUE SPACES.
    02  FILLER PICTURE X(75) VALUE 'BLUE      NON-BLUE'.

01  IGR-38.
    02  FILLER PICTURE X(57) VALUE SPACES.
    02  FILLER PICTURE X(76) VALUE 'COLLAR      COLLAR'.
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01  IGR-39.
    02  FILLER PICTURE X(22) VALUE '          MINIMUM GOALS'.
    02  FILLER PICTURE X(34) VALUE SPACES.
    02  FILLER PICTURE X(77) VALUE 'PLACEMENT   PLACEMENT'.

01  IGR-41.
    02  FILLER PICTURE X(59) VALUE '           I. DAYS UNEMPLOYED
-       ' BEFORE PLACEMENT              '.
    02  IGR-I-R PICTURE ZZ9.
    02  FILLER PICTURE X(9) VALUE SPACES.
    02  IGR-I-NR PICTURE ZZ9.
    02  FILLER PICTURE X(59) VALUE SPACES.

01  IGR-43.
    02  FILLER PICTURE X(58) VALUE '           II. HOURLY WAGE AT
-       'PLACEMENT                      '.
    02  IGR-II-R PICTURE 9.99.
    02  FILLER PICTURE X(8) VALUE SPACES.
    02  IGR-II-NR PICTURE 9.99.
    02  FILLER PICTURE X(59) VALUE SPACES.

01  IGR-45.
    02  FILLER PICTURE X(59) VALUE '           III. DAYS WORKED DUR
-       'ING YEAR AFTER PLACEMENT       '.
    02  IGR-III-R PICTURE ZZ9.
    02  FILLER PICTURE X(9) VALUE SPACES.
    02  IGR-III-NR PICTURE ZZ9.
    02  FILLER PICTURE X(59) VALUE SPACES.

01  IGR-47.
    02  FILLER PICTURE X(57) VALUE '           IV. EARNINGS DURING
-       ' YEAR AFTER PLACEMENT          '.
    02  IGR-IV-R PICTURE Z(4)9.
    02  FILLER PICTURE X(7) VALUE SPACES.
    02  IGR-IV-NR PICTURE Z(4)9.
    02  FILLER PICTURE X(59) VALUE SPACES.

01  IGR-49.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(117) VALUE '*IV = R X II X III*'.

01  IGR-52.
    02  FILLER PICTURE X(9) VALUE SPACES.
    02  FILLER PICTURE X(21) VALUE 'PLACEMENT INFORMATION'.
    02  FILLER PICTURE X(103) VALUE SPACES.

01  IGR-54.
    02  FILLER PICTURE X(14) VALUE SPACES.
    02  FILLER PICTURE X(17) VALUE 'DATE OF PLACEMENT'.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(86) VALUE 'HOURLY WAGE AT PLACEMENT'.
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01  IGR-55.
    02  FILLER PICTURE X(32) VALUE SPACES.
    02  FILLER PICTURE X(9)  VALUE '---------'.
    02  FILLER PICTURE X(31) VALUE SPACES.
    02  FILLER PICTURE X(61) VALUE '------'.

01  IGR-56.
    02  FILLER PICTURE X(14) VALUE SPACES.
    02  FILLER PICTURE X(21) VALUE 'BLUE COLLAR PLACEMENT'.
    02  FILLER PICTURE X(12) VALUE SPACES.
    02  FILLER PICTURE X(86) VALUE 'WEEKS IN TRAINING AND/OR'.

01  IGR-57.
    02  FILLER PICTURE X(14) VALUE SPACES.
    02  FILLER PICTURE X(27) VALUE '*YES = 1, NO = 0*      -----'.
    02  FILLER PICTURE X(19) VALUE '      TEMPORARY JOB'.
    02  FILLER PICTURE X(73) VALUE '            ------'.

01  IR-FR-11.
    02  FILLER PICTURE X(27) VALUE '            I. LENGTH OF PER'.
    02  FILLER PICTURE X(106) VALUE 'IOD UNTIL PLACEMENT'.

01  IR-FR-12.
    02  FILLER PICTURE X(27) VALUE '               *EXCLUDING TR'.
    02  FILLER PIC X(106) VALUE 'AINING AND/OR TEMPORARY JOBS*'.

01  IR-FR-14.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(20) VALUE 'A. ACTUAL --------- '.
    02  IR-FR-I-A PICTURE ZZ9.
    02  FILLER PICTURE X(94) VALUE SPACES.

01  IR-FR-16.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(20) VALUE 'B. INITIAL GOAL --- '.
    02  IR-FR-I-B PICTURE ZZ9.
    02  FILLER PICTURE X(94) VALUE SPACES.

01  IR-FR-18.
    02  FILLER PICTURE X(27) VALUE '          II. HOURLY WAGE A'.
    02  FILLER PICTURE X(106) VALUE 'T PLACEMENT'.

01  IR-FR-20.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(19) VALUE 'A. ACTUAL -------- '.
    02  IR-FR-II-A PICTURE 9.99.
    02  FILLER PICTURE X(94) VALUE SPACES.

01  IR-FR-22.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(19) VALUE 'B. INITIAL GOAL -- '.
    02  IR-FR-II-B PICTURE 9.99.
    02  FILLER PICTURE X(94) VALUE SPACES.
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01  IR-24.
    02  FILLER PICTURE X(27) VALUE '          III. DAYS WORKED D'.
    02  FILLER PICTURE X(106) VALUE 'URING YEAR AFTER PLACEMENT'.

01  IR-26.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(24) VALUE 'A. INTERIM ESTIMATE --- '.
    02  IR-III-A PICTURE ZZ9.
    02  FILLER PICTURE X(90) VALUE SPACES.

01  IR-28.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(24) VALUE 'B. INITIAL GOAL ------- '.
    02  IR-III-B PICTURE ZZ9.
    02  FILLER PICTURE X(90) VALUE SPACES.

01  IR-30.
    02  FILLER PICTURE X(27) VALUE '          IV. EARNINGS DURI'.
    02  FILLER PICTURE X(106) VALUE 'NG YEAR AFTER PLACEMENT'.

01  IR-32.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(22) VALUE 'A. INTERIM ESTIMATE --'.
    02  IR-IV-A PICTURE ZZZZ9.
    02  FILLER PICTURE X(90) VALUE SPACES.

01  IR-33.
    02  FILLER PICTURE X(19) VALUE SPACES.
    02  FILLER PICTURE X(114) VALUE '*B X IIA X IIIA*'.

01  IR-35.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(22) VALUE 'B. INITIAL GOAL ------'.
    02  IR-IV-B PICTURE ZZZZ9.
    02  FILLER PICTURE X(90) VALUE SPACES.

01  IR-37.
    02  FILLER PICTURE X(27) VALUE '          V. CALCULATION O'.
    02  FILLER PICTURE X(106) VALUE 'F INTERIM PAYMENT POINTS'.

01  IR-39.
    02  FILLER PICTURE X(72) VALUE '                    A. INTERIM CA
-       'LCULATION OF BENEFITS FROM J.A. SERVICES --'.
    02  IR-V-A PICTURE ZZZZ9.
    02  FILLER PICTURE X(56) VALUE SPACES.

01  IR-40.
    02  FILLER PICTURE X(64) VALUE '                        *IB - IA =
-       ' D, IVA - IVB = E, B X D X IIA = F,'.
    02  FILLER PICTURE X(69) VALUE SPACES.

01  IR-41.
    02  FILLER PICTURE X(60) VALUE '                          E + F = R
-       'ESULT.  IF NEGATIVE, MAKE ZERO*'.
    02  FILLER PICTURE X(73) VALUE SPACES.
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01  IR-43.
    02  FILLER PICTURE X(19) VALUE SPACES.
    02  FILLER PICTURE X(114) VALUE 'TIMES'.

01  IR-45.
    02  FILLER PICTURE X(49) VALUE '                B. INTERIM PO
-        'INT FACTOR ----  1/3'.
    02  FILLER PICTURE X(84) VALUE SPACES.

01  IR-47.
    02  FILLER PICTURE X(19) VALUE SPACES.
    02  FILLER PICTURE X(114) VALUE 'EQUALS'.

01  IR-49.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PIC X(28) VALUE 'C. INTERIM PAYMENT POINTS --'.
    02  IR-V-C PICTURE ZZZZ9.
    02  FILLER PICTURE X(84) VALUE SPACES.

01  IR-52.
    02  FILLER PICTURE X(27) VALUE '          FINAL INPUT: TOTAL'.
    02  FILLER PICTURE X(106) VALUE ' INCOME DURING YEAR AFTER PL
-        'ACEMENT'.

01  IR-53.
    02  FILLER PICTURE X(63) VALUE SPACES.
    02  FILLER PICTURE X(70) VALUE '---------'.

01  IR-54.
    02  FILLER PICTURE X(27) VALUE '            CLIENT ADDRESS A'.
    02  FILLER PICTURE X(106) VALUE 'ND PHONE           EMPLOYER N
-        'AME, ADDRESS, AND PHONE'.

01  FR-24.
    02  FILLER PICTURE X(27) VALUE '          III. EARNINGS DURI'.
    02  FILLER PICTURE X(106) VALUE 'NG YEAR AFTER PLACEMENT'.

01  FR-26.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(18) VALUE 'A. ACTUAL --------'.
    02  FR-III-A PICTURE ZZZZ9.
    02  FILLER PICTURE X(94) VALUE SPACES.

01  FR-28.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PICTURE X(18) VALUE 'B. INITIAL GOAL --'.
    02  FR-III-B PICTURE ZZZZ9.
    02  FILLER PICTURE X(94) VALUE SPACES.

01  FR-30.
    02  FILLER PICTURE X(27) VALUE '           IV. CALCULATION O'.
    02  FILLER PICTURE X(106) VALUE 'F FINAL PAYMENT POINTS'.
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01  FR-32.
    02  FILLER PICTURE X(70) VALUE '                    A. FINAL CALC
-       'ULATION OF BENEFITS FROM J.A. SERVICES --'.
    02  FR-IV-A PICTURE ZZZZ9.
    02  FILLER PICTURE X(58) VALUE SPACES.

01  FR-33.
    02  FILLER PICTURE X(66) VALUE '                        *IB - IA =
-       ' D. IIIA - IIIB = E, B X D X IIA = F,'.
    02  FILLER PICTURE X(67) VALUE SPACES.

01  FR-34.
    02  FILLER PICTURE X(60) VALUE '                          E + F = R
-       'ESULT.  IF NEGATIVE, MAKE ZERO*'.
    02  FILLER PICTURE X(73) VALUE SPACES.

01  FR-36.
    02  FILLER PICTURE X(19) VALUE SPACES.
    02  FILLER PICTURE X(114) VALUE 'LESS'.

01  FR-38.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PIC X(28) VALUE 'B. INTERIM PAYMENT POINTS --'.
    02  FR-IV-B PICTURE ZZZZ9.
    02  FILLER PICTURE X(84) VALUE SPACES.

01  FR-40.
    02  FILLER PICTURE X(19) VALUE SPACES.
    02  FILLER PICTURE X(114) VALUE 'EQUALS'.

01  FR-42.
    02  FILLER PICTURE X(16) VALUE SPACES.
    02  FILLER PIC X(28) VALUE 'C. FINAL PAYMENT POINTS ----'.
    02  FR-IV-C PICTURE ZZZZ9.
    02  FILLER PICTURE X(84) VALUE SPACES.

01  FR-43.
    02  FILLER PICTURE X(19) VALUE SPACES.
    02  FILLER PICTURE X(114) VALUE '*IF NEGATIVE, MAKE ZERO*'.

01  ALL-59.
    02  FILLER PICTURE X(13) VALUE '          JA 0'.
    02  HRD-JA-REPORT-NO PICTURE X.
    02  FILLER PICTURE X(5) VALUE SPACES.
    02  FILLER PICTURE X(26) VALUE 'JOB AGENT INCENTIVE PAY - '.
    02  HRD-JA-REPORT-NAME PICTURE X(20).
    02  FILLER PICTURE X(68) VALUE SPACES.

01  RESUBMIT-ERROR-MESSAGE-1.
    02  FILLER PICTURE X(13) VALUE SPACES.
    02  FILLER PICTURE X(120) VALUE '*** ONE OR MORE OF THE ABOVE
-       ' FIELDS IS IN ERROR.'.

01  RESUBMIT-ERROR-MESSAGE-2.
    02  FILLER PICTURE X(17) VALUE SPACES.
    02  FILLER PICTURE X(116) VALUE 'DETERMINE WHICH FIELD IS IN
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-          'ERROR AND RESUBMIT A COMPLETE NEW'.
 01  RESUBMIT-ERROR-MESSAGE-3.
     02  FILLER PICTURE X(19) VALUE SPACES.
     02  FILLER PICTURE X(114) VALUE 'JA 01 INITIAL INTAKE REPORT
-          'FORM'.

 01  INTAKE-ERROR-MESSAGE.
     02  FILLER PICTURE X(13) VALUE SPACES.
     02  FILLER PICTURE X(120) VALUE 'ERROR IN INTAKE DATA'.

 01  PLACEMENT-ERROR-MESSAGE.
     02  FILLER PICTURE X(13) VALUE SPACES.
     02  FILLER PICTURE X(120) VALUE 'ERROR IN PLACEMENT DATA'.

 01  INCOME-ERROR-MESSAGE.
     02  FILLER PICTURE X(13) VALUE SPACES.
     02  FILLER PICTURE X(120) VALUE 'ERROR IN FIRST-YEAR INCOME'.

 PROCEDURE DIVISION.

     COMPUTE BACKWARD-FACTOR = US67 / CA71.
     MULTIPLY BACKWARD-FACTOR BY DAYS-UNEMPLOYED-COEF (25).
     MULTIPLY .01 BY DAYS-UNEMPLOYED-COEF (25).
     MULTIPLY BACKWARD-FACTOR BY HOURLY-WAGE-COEF (25).
     MULTIPLY .01 BY HOURLY-WAGE-COEF (25).
     MULTIPLY BACKWARD-FACTOR BY DAYS-WORKED-COEF (25).
     MULTIPLY .01 BY DAYS-WORKED-COEF (25).
     MULTIPLY BACKWARD-FACTOR BY I-E-DAYS-WORKED-COEF (25).
     MULTIPLY .01 BY I-E-DAYS-WORKED-COEF (25).
     MULTIPLY BACKWARD-FACTOR BY DAYS-UNEMPLOYED-COEF (26).
     MULTIPLY BACKWARD-FACTOR BY HOURLY-WAGE-COEF (26).
     MULTIPLY BACKWARD-FACTOR BY DAYS-WORKED-COEF (26).
     MULTIPLY BACKWARD-FACTOR BY I-E-DAYS-WORKED-COEF (26).
     MULTIPLY BACKWARD-FACTOR BY I-E-DAYS-WORKED-COEF (30).
     MULTIPLY .01 BY I-E-DAYS-WORKED-COEF (30).
     COMPUTE FORWARD-FACTOR = CA72 / US69.
     MOVE 1 TO REPORT-TYPE.
     OPEN INPUT CARD.
     OPEN OUTPUT LISTING.

 READ-CARD.
     READ CARD AT END GO TO DONE.
     IF TYPE-OR-CLIENT-INITIAL IS NOT NUMERIC GO TO PRINT-TITLE.
     IF TYPE-OR-CLIENT-INITIAL IS > '3' GO TO PRINT-TITLE.
     MOVE TYPE-OR-CLIENT-INITIAL TO REPORT-TYPE.
     GO TO READ-CARD.

 PRINT-TITLE.
     IF REPORT-TYPE = 1 MOVE 'INITIAL GOALS REPORT' TO TITLE.
     IF REPORT-TYPE = 2 MOVE '   INTERIM REPORT    ' TO TITLE.
     IF REPORT-TYPE = 3 MOVE '    FINAL REPORT     ' TO TITLE.
     WRITE PRINT-LINE FROM ALL-1 AFTER PAGING.

     MOVE TYPE-OR-CLIENT-INITIAL TO INITIAL.
     MOVE CLIENT-SURNAME TO SURNAME.
     MOVE FIELD-OFFICE-NUMBER TO FIELD-O.
     WRITE PRINT-LINE FROM ALL-3 AFTER 2.
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MOVE SSA1 TO SSA-1.
MOVE SSA2 TO SSA-2.
MOVE SSA3 TO SSA-3.
MOVE JOB-AGENT-NUMBER TO JA-NO.
WRITE PRINT-LINE FROM ALL-5 AFTER 2.

MOVE DATE-ASSIGNED-MONTH TO DATEA-M.
MOVE DATE-ASSIGNED-DAY TO DATEA-D.
MOVE DATE-ASSIGNED-YEAR TO DATEA-Y.
MOVE CURRENT-DATE TO REPORT-DATE.
EXAMINE REPORT-DATE REPLACING ALL '/' BY '-'.
WRITE PRINT-LINE FROM ALL-7 AFTER 2.

WRITE PRINT-LINE FROM ALL-8 AFTER 1.

MOVE 0 TO ERROR-1.
MOVE 0 TO ERROR-2.
MOVE 0 TO ERROR-3.

IF SSA1 IS NOT NUMERIC GO TO SET-ERROR-1.
IF SSA2 IS NOT NUMERIC GO TO SET-ERROR-1.
IF SSA3 IS NOT NUMERIC GO TO SET-ERROR-1.

IF DATE-ASSIGNED-MONTH IS NOT NUMERIC GO TO SET-ERROR-1.
IF DATE-ASSIGNED-DAY   IS NOT NUMERIC GO TO SET-ERROR-1.
IF DATE-ASSIGNED-YEAR  IS NOT NUMERIC GO TO SET-ERROR-1.
MOVE DATE-ASSIGNED-MONTH TO MONTH.
MOVE DATE-ASSIGNED-DAY TO DAY.
MOVE DATE-ASSIGNED-YEAR TO YEAR.
IF MONTH < 1 OR > 12 GO TO SET-ERROR-1.
IF DAY < 1 OR > 31 GO TO SET-ERROR-1.
IF YEAR < 72 OR > 75 GO TO SET-ERROR-1.
IF YEAR = 72 AND MONTH < 7 GO TO TOO-EARLY-ERROR.
IF MONTH > 2 MOVE 0 TO TEMP, ELSE COMPUTE TEMP = MONTH + 1.
COMPUTE DAY-OF-YEAR = 30.6 * MONTH + TEMP + DAY - 32.3.
COMPUTE JULIAN-ASSIGN = 365 * (YEAR - 72) + DAY-OF-YEAR -
  182.
COMPUTE TEMP = JULIAN-ASSIGN / 7.
COMPUTE MOD-JULIAN-ASSIGN = JULIAN-ASSIGN - 2 * TEMP.

IF FIELD-OFFICE-NUMBER IS NOT NUMERIC GO TO SET-ERROR-1.
IF JOB-AGENT-NUMBER IS NOT NUMERIC GO TO SET-ERROR-1.

IF MALE = ' ' MOVE '0' TO MALE.
IF MALE NOT = '0' AND NOT = '1' GO TO SET-ERROR-1.
MOVE MALE TO 7-MALE.

IF MARRIED = ' ' MOVE '0' TO MARRIED.
IF MARRIED NOT = '0' AND NOT = '1' GO TO SET-ERROR-1.
MOVE MARRIED TO 8-MARRIED.

IF VETERAN = ' ' MOVE '0' TO VETERAN.
IF VETERAN NOT = '0' AND NOT = '1' GO TO SET-ERROR-1.
MOVE VETERAN TO 9-VETERAN.
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IF VOCATIONAL-TRAINING = ' ' MOVE '0' TO VOCATIONAL-TRAINING.
IF VOCATIONAL-TRAINING NOT = '0' AND NOT = '1' GO TO
  SET-ERROR-1.
MOVE VOCATIONAL-TRAINING TO 10-VOCATIONAL-TRAINING.

IF PHYSICALLY-HANDICAPPED = ' ' MOVE '0' TO
  PHYSICALLY-HANDICAPPED.
IF PHYSICALLY-HANDICAPPED NOT = '0' AND NOT = '1' GO TO
  SET-ERROR-1.
MOVE PHYSICALLY-HANDICAPPED TO 11-PHYSICALLY-HANDICAPPED.

IF WELFARE = ' ' MOVE '0' TO WELFARE.
IF WELFARE NOT = '0' AND NOT = '1' GO TO SET-ERROR-1.
MOVE WELFARE TO 12-WELFARE.

IF HIGH-SCHOOL-DROPOUT = ' ' MOVE '0' TO HIGH-SCHOOL-DROPOUT.
IF HIGH-SCHOOL-DROPOUT NOT = '0' AND NOT = '1' GO TO
  SET-ERROR-1.
MOVE HIGH-SCHOOL-DROPOUT TO 13-HIGH-SCHOOL-DROPOUT.

IF LABOR-UNION = ' ' MOVE '0' TO LABOR-UNION.
IF LABOR-UNION NOT = '0' AND NOT = '1' GO TO SET-ERROR-1.
MOVE LABOR-UNION TO 14-LABOR-UNION.

IF BLUE-COLLAR-LAST-JOB = ' ' MOVE '0' TO
  BLUE-COLLAR-LAST-JOB.
IF BLUE-COLLAR-LAST-JOB NOT = '0' AND NOT = '1' GO TO
  SET-ERROR-1.
MOVE BLUE-COLLAR-LAST-JOB TO 15-BLUE-COLLAR-LAST-JOB.

IF RURAL-AREA = ' ' MOVE '0' TO RURAL-AREA.
IF RURAL-AREA NOT = '0' AND NOT = '1' GO TO SET-ERROR-1.
MOVE RURAL-AREA TO 16-RURAL-AREA.

IF RECENT-LONG-TERM-UNEMPLOYMENT = ' ' MOVE '0' TO
  RECENT-LONG-TERM-UNEMPLOYMENT.
IF RECENT-LONG-TERM-UNEMPLOYMENT NOT = '0' AND NOT = '1' GO
  TO SET-ERROR-1.
MOVE RECENT-LONG-TERM-UNEMPLOYMENT TO
  17-RECENT-LONG-TERM-UNEMP.

IF SPANISH-SURNAME = ' ' MOVE '0' TO SPANISH-SURNAME.
IF SPANISH-SURNAME NOT = '0' AND NOT = '1' GO TO SET-ERROR-1.
MOVE SPANISH-SURNAME TO 18-SPANISH-SURNAME.

IF WHITE = ' ' MOVE '0' TO WHITE.
IF WHITE NOT = '0' AND NOT = '1' GO TO SET-ERROR-1.
MOVE WHITE TO 19-WHITE.

EXAMINE AGE REPLACING ALL SPACES BY ZERO.
IF AGE IS NOT NUMERIC GO TO SET-ERROR-1.
IF AGE < '16' GO TO SET-ERROR-1.
MOVE AGE TO 20-AGE.
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    EXAMINE FAMILY-SIZE REPLACING ALL SPACES BY ZERO.
    IF FAMILY-SIZE IS NOT NUMERIC GO TO SET-ERROR-1.
    IF FAMILY-SIZE > '30' GO TO SET-ERROR-1.
    MOVE FAMILY-SIZE TO 21-FAMILY-SIZE.

    EXAMINE NUMBER-OF-CARS-IN-FAMILY REPLACING ALL SPACE BY ZERO.
    IF NUMBER-OF-CARS-IN-FAMILY IS NOT NUMERIC GO TO SET-ERROR-1.
    MOVE NUMBER-OF-CARS-IN-FAMILY TO 22-NUMBER-OF-CARS-IN-FAMILY.

    EXAMINE DAYS-UNEMPLOYED-LAST-YEAR REPLACING ALL SPACES BY
      ZERO.
    IF DAYS-UNEMPLOYED-LAST-YEAR IS NOT NUMERIC GO TO
      SET-ERROR-1.
    IF DAYS-UNEMPLOYED-LAST-YEAR > '260' GO TO SET-ERROR-1.
    MOVE DAYS-UNEMPLOYED-LAST-YEAR TO
      23-DAYS-UNEMPLOYED-LAST-YEAR.

    EXAMINE DAYS-WORKED-LAST-YEAR REPLACING ALL SPACES BY ZERO.
    IF DAYS-WORKED-LAST-YEAR IS NOT NUMERIC GO TO SET-ERROR-1.
    IF DAYS-WORKED-LAST-YEAR > '260' GO TO SET-ERROR-1.
    MOVE DAYS-WORKED-LAST-YEAR TO 24-DAYS-WORKED-LAST-YEAR.

    EXAMINE HOURLY-WAGE-LAST-JOB REPLACING ALL SPACES BY ZERO.
    IF HOURLY-WAGE-LAST-JOB IS NOT NUMERIC GO TO SET-ERROR-1.
    MOVE HOURLY-WAGE-LAST-JOB TO 25-HOURLY-WAGE-LAST-JOB.

    EXAMINE TOTAL-INCOME-LAST-YEAR REPLACING ALL SPACES BY ZERO.
    IF TOTAL-INCOME-LAST-YEAR IS NOT NUMERIC GO TO SET-ERROR-1.
    MOVE TOTAL-INCOME-LAST-YEAR TO 26-TOTAL-INCOME-LAST-YEAR.

    GO TO L10.

TOO-EARLY-ERROR.
    WRITE PRINT-LINE FROM TOO-EARLY-ERROR-MESSAGE AFTER 2.

SET-ERROR-1.
    MOVE 1 TO ERROR-1.

L10.
    IF REPORT-TYPE NOT = 1 GO TO CHECK-FOR-ERROR-2.
    WRITE PRINT-LINE FROM IGR-10 AFTER 2.
    MOVE MALE TO P-7.
    MOVE AGE TO P-20.
    WRITE PRINT-LINE FROM IGR-12 AFTER 2.
    MOVE MARRIED TO P-8.
    MOVE FAMILY-SIZE TO P-21.
    WRITE PRINT-LINE FROM IGR-14 AFTER 2.
    MOVE VETERAN TO P-9.
    MOVE NUMBER-OF-CARS-IN-FAMILY TO P-22.
    WRITE PRINT-LINE FROM IGR-16 AFTER 2.
    MOVE VOCATIONAL-TRAINING TO P-10.
    MOVE DAYS-UNEMPLOYED-LAST-YEAR TO P-23.
    WRITE PRINT-LINE FROM IGR-18 AFTER 2.
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           MOVE PHYSICALLY-HANDICAPPED TO P-11.
           MOVE DAYS-WORKED-LAST-YEAR TO P-24.
           WRITE PRINT-LINE FROM IGR-20 AFTER 2.
           MOVE WELFARE TO P-12.
           MOVE HOURLY-WAGE-LAST-JOB TO TEMP.
           COMPUTE P-25 = TEMP / 100.
           WRITE PRINT-LINE FROM IGR-22 AFTER 2.
           MOVE HIGH-SCHOOL-DROPOUT TO P-13.
           MOVE TOTAL-INCOME-LAST-YEAR TO P-26.
           WRITE PRINT-LINE FROM IGR-24 AFTER 2.
           MOVE LABOR-UNION TO P-14.
           WRITE PRINT-LINE FROM IGR-26 AFTER 2.
           MOVE BLUE-COLLAR-LAST-JOB TO P-15.
           WRITE PRINT-LINE FROM IGR-28 AFTER 2.
           MOVE RURAL-AREA TO P-16.
           WRITE PRINT-LINE FROM IGR-30 AFTER 2.
           MOVE RECENT-LONG-TERM-UNEMPLOYMENT TO P-17.
           WRITE PRINT-LINE FROM IGR-32 AFTER 2.
           MOVE SPANISH-SURNAME TO P-18.
           WRITE PRINT-LINE FROM IGR-34 AFTER 2.
           MOVE WHITE TO P-19.
           WRITE PRINT-LINE FROM IGR-36 AFTER 2.
           GO TO TEST-IF-ANY-ERROR-SET.

       CHECK-FOR-ERROR-2.
           IF PLACEMENT-DATE-MONTH IS NOT NUMERIC GO TO SET-ERROR-2.
           IF PLACEMENT-DATE-DAY   IS NOT NUMERIC GO TO SET-ERROR-2.
           IF PLACEMENT-DATE-YEAR  IS NOT NUMERIC GO TO SET-ERROR-2.
           MOVE PLACEMENT-DATE-MONTH TO MONTH.
           MOVE PLACEMENT-DATE-DAY TO DAY.
           MOVE PLACEMENT-DATE-YEAR TO YEAR.
           IF MONTH < 1 OR > 12 GO TO SET-ERROR-2.
           IF DAY < 1 OR > 31 GO TO SET-ERROR-2.
           IF YEAR < 72 OR > 75 GO TO SET-ERROR-2.
           IF YEAR = 72 AND MONTH < 7 GO TO SET-ERROR-2.
           IF MONTH > 2 MOVE 0 TO TEMP, ELSE COMPUTE TEMP = MONTH + 1.
           COMPUTE DAY-OF-YEAR = 30.6 * MONTH + TEMP + DAY - 32.3.
           COMPUTE JULIAN-PLACE = 365 * (YEAR - 72) + DAY-OF-YEAR - 182.
           COMPUTE TEMP = JULIAN-PLACE / 7.
           COMPUTE MOD-JULIAN-PLACE = JULIAN-PLACE - 2 * TEMP.

           EXAMINE WEEKS-IN-TRAINING-OR-TEMP-JOB REPLACING ALL SPACES
             BY ZERO.
           IF WEEKS-IN-TRAINING-OR-TEMP-JOB IS NOT NUMERIC GO TO
             SET-ERROR-2.
           MOVE WEEKS-IN-TRAINING-OR-TEMP-JOB TO TEMP.
           COMPUTE TEMP = MOD-JULIAN-PLACE - MOD-JULIAN-ASSIGN -
             5 * TEMP.
           IF TEMP < 1 OR > 500 GO TO SET-ERROR-2.
           MOVE TEMP TO ACTUAL-DAYS-UNEMPLOYED.

           EXAMINE BLUE-COLLAR-PLACEMENT REPLACING ALL SPACES BY ZERO.
           IF BLUE-COLLAR-PLACEMENT NOT = '0' AND NOT = '1' GO TO
             SET-ERROR-2.
           MOVE BLUE-COLLAR-PLACEMENT TO 29-BLUE-COLLAR-PLACEMENT.
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    EXAMINE HOURLY-WAGE-AT-PLACEMENT REPLACING ALL SPACES BY
      ZERO.
    IF HOURLY-WAGE-AT-PLACEMENT IS NOT NUMERIC GO TO SET-ERROR-2.
    MOVE HOURLY-WAGE-AT-PLACEMENT TO 30-HOURLY-WAGE-AT-PLACEMENT.
    GO TO L20.

SET-ERROR-2.
    MOVE 1 TO ERROR-2.

L20.
    IF REPORT-TYPE = 2 GO TO TEST-IF-ANY-ERROR-SET.
    EXAMINE TOTAL-FIRST-YEAR-INCOME REPLACING ALL SPACES BY ZERO.
    IF TOTAL-FIRST-YEAR-INCOME IS NOT NUMERIC GO TO SET-ERROR-3.
    MOVE TOTAL-FIRST-YEAR-INCOME TO ACTUAL-FIRST-YEAR-INCOME.
    IF ACTUAL-FIRST-YEAR-INCOME < 20000 GO TO
      TEST-IF-ANY-ERROR-SET.

SET-ERROR-3.
    MOVE 1 TO ERROR-3.

TEST-IF-ANY-ERROR-SET.
    IF ERROR-1 = 0 AND ERROR-2 = 0 AND ERROR-3 = 0 GO TO
      COMPUTE-INITIAL-GOALS.
    IF REPORT-TYPE NOT = 1 GO TO PRINT-ERROR-MESSAGES-BY-TYPE.
    WRITE PRINT-LINE FROM RESUBMIT-ERROR-MESSAGE-1 AFTER 3.
    WRITE PRINT-LINE FROM RESUBMIT-ERROR-MESSAGE-2 AFTER 1.
    WRITE PRINT-LINE FROM RESUBMIT-ERROR-MESSAGE-3 AFTER 1.
    MOVE 15 TO SPACING.
    GO TO PRINT-TRAILER.

PRINT-ERROR-MESSAGES-BY-TYPE.
    IF ERROR-1 = 1 WRITE PRINT-LINE FROM INTAKE-ERROR-MESSAGE
      AFTER 3.
    IF ERROR-2 = 1 WRITE PRINT-LINE FROM PLACEMENT-ERROR-MESSAGE
      AFTER 3.
    IF ERROR-3 = 1 WRITE PRINT-LINE FROM INCOME-ERROR-MESSAGE
      AFTER 3.
    MOVE 38 TO SPACING.
    GO TO PRINT-TRAILER.

COMPUTE-INITIAL-GOALS.
    MULTIPLY 20-AGE BY 20-AGE GIVING 27-AGE-SQUARED.
    MULTIPLY 20-AGE BY 13-HIGH-SCHOOL-DROPOUT GIVING
      28-AGE-TIMES-HS-DROPOUT.
    MOVE DAYS-UNEMPLOYED-INTERCEPT TO DU-NB.
    MOVE HOURLY-WAGE-INTERCEPT TO HW-NB.
    MOVE DAYS-WORKED-INTERCEPT TO DW-NB.
    PERFORM INITIAL-GOALS-REGRESSION VARYING XR FROM 7 BY 1
      UNTIL XR > 28.
    COMPUTE DU-B = DU-NB + DAYS-UNEMPLOYED-COEF (29).
    IF DU-NB < 5 MOVE 5 TO DU-NB.
    IF DU-B  < 5 MOVE 5 TO DU-B.
    ADD .9999 TO DU-NB.
    ADD .9999 TO DU-B.
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MOVE DU-NB TO GOAL-DAYS-UNEMPLOYED-NON-BLUE.
MOVE DU-B  TO GOAL-DAYS-UNEMPLOYED-BLUE.

COMPUTE HW-B = HW-NB + HOURLY-WAGE-COEF (29).
COMPUTE HW-NB = HW-NB * FORWARD-FACTOR * .01.
COMPUTE HW-B  = HW-B  * FORWARD-FACTOR * .01.
IF HW-NB < MINIMUM-WAGE MOVE MINIMUM-WAGE TO HW-NB.
IF HW-B  < MINIMUM-WAGE MOVE MINIMUM-WAGE TO HW-B.
MOVE HW-NB TO GOAL-HOURLY-WAGE-NON-BLUE.
MOVE HW-B  TO GOAL-HOURLY-WAGE-BLUE.

COMPUTE DW-B = DW-NB + DAYS-WORKED-COEF (29).
IF DW-NB < 15 MOVE 15 TO DW-NB.
IF DW-B  < 15 MOVE 15 TO DW-B.
IF DW-NB > 260 MOVE 260 TO DW-NB.
IF DW-B  > 260 MOVE 260 TO DW-B.
MOVE DW-NB TO GOAL-DAYS-WORKED-NON-BLUE.
MOVE DW-B  TO GOAL-DAYS-WORKED-BLUE.

COMPUTE GOAL-FIRST-YEAR-INCOME-NON-BLU =
  8 * GOAL-HOURLY-WAGE-NON-BLUE * GOAL-DAYS-WORKED-NON-BLUE.
COMPUTE GOAL-FIRST-YEAR-INCOME-BLUE =
  8 * GOAL-HOURLY-WAGE-BLUE * GOAL-DAYS-WORKED-BLUE.
IF REPORT-TYPE NOT = 1 GO TO INTERIM-COMPUTATIONS.

WRITE PRINT-LINE FROM IGR-37 AFTER 1.
WRITE PRINT-LINE FROM IGR-38 AFTER 1.
WRITE PRINT-LINE FROM IGR-39 AFTER 1.

MOVE GOAL-DAYS-UNEMPLOYED-BLUE TO IGR-I-B.
MOVE GOAL-DAYS-UNEMPLOYED-NON-BLUE TO IGR-I-NB.
WRITE PRINT-LINE FROM IGR-41 AFTER 2.

MOVE GOAL-HOURLY-WAGE-BLUE TO IGR-II-B.
MOVE GOAL-HOURLY-WAGE-NON-BLUE TO IGR-II-NB.
WRITE PRINT-LINE FROM IGR-43 AFTER 2.

MOVE GOAL-DAYS-WORKED-BLUE TO IGR-III-B.
MOVE GOAL-DAYS-WORKED-NON-BLUE TO IGR-III-NB.
WRITE PRINT-LINE FROM IGR-45 AFTER 2.

MOVE GOAL-FIRST-YEAR-INCOME-BLUE TO IGR-IV-B.
MOVE GOAL-FIRST-YEAR-INCOME-NON-BLU TO IGR-IV-NB.
WRITE PRINT-LINE FROM IGR-47 AFTER 2.

WRITE PRINT-LINE FROM IGR-49 AFTER 2.
WRITE PRINT-LINE FROM IGR-52 AFTER 3.
WRITE PRINT-LINE FROM IGR-54 AFTER 2.
WRITE PRINT-LINE FROM IGR-55 AFTER 1.
WRITE PRINT-LINE FROM IGR-56 AFTER 1.
WRITE PRINT-LINE FROM IGR-57 AFTER 1.
MOVE 2 TO SPACING.
GO TO PRINT-TRAILER.
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 INTERIM-COMPUTATIONS.
      IF 29-BLUE-COLLAR-PLACEMENT = 1 MOVE GOAL-DAYS-UNEMPLOYED-
     -    BLUE TO GOAL-DAYS-UNEMPLOYED, ELSE
          MOVE GOAL-DAYS-UNEMPLOYED-NON-BLUE TO GOAL-DAYS-UNEMPLOYED.
      IF 29-BLUE-COLLAR-PLACEMENT = 1 MOVE GOAL-HOURLY-WAGE-BLUE TO
        GOAL-HOURLY-WAGE, ELSE
        MOVE GOAL-HOURLY-WAGE-NON-BLUE TO GOAL-HOURLY-WAGE.
      MOVE I-E-DAYS-WORKED-INTERCEPT TO IEDW.
      PERFORM INTERIM-EST-DAYS-WORKED-REGRES VARYING XR FROM 7 BY 1
        UNTIL XR > 30.
      IF IEDW < 15 MOVE 15 TO IEDW.
      IF IEDW > 260 MOVE 260 TO IEDW.
      MOVE IEDW TO INTERIM-ESTIMATE-DAYS-WORKED.
      IF 29-BLUE-COLLAR-PLACEMENT = 1 MOVE GOAL-DAYS-WORKED-BLUE TO
        GOAL-DAYS-WORKED, ELSE
        MOVE GOAL-DAYS-WORKED-NON-BLUE TO GOAL-DAYS-WORKED.
      COMPUTE INTERIM-EST-FIRST-YEAR-INCOME =
        A * .01 * 30-HOURLY-WAGE-AT-PLACEMENT *
        INTERIM-ESTIMATE-DAYS-WORKED.
      IF 29-BLUE-COLLAR-PLACEMENT = 1 MOVE GOAL-FIRST-YEAR-INCOME-
     -    BLUE TO GOAL-FIRST-YEAR-INCOME, ELSE MOVE
          GOAL-FIRST-YEAR-INCOME-NON-BLU TO GOAL-FIRST-YEAR-INCOME.
      COMPUTE D = GOAL-DAYS-UNEMPLOYED - ACTUAL-DAYS-UNEMPLOYED.
      COMPUTE E = INTERIM-EST-FIRST-YEAR-INCOME -
        GOAL-FIRST-YEAR-INCOME.
      COMPUTE F = A * D * .01 * 30-HOURLY-WAGE-AT-PLACEMENT.
      COMPUTE TEMP = E + F + .9999.
      IF TEMP < 0 MOVE 0 TO INTERIM-BENEFIT, ELSE MOVE TEMP TO
        INTERIM-BENEFIT.
      COMPUTE INTERIM-PAYMENT-POINTS = (INTERIM-BENEFIT + 2) / 3.
      WRITE PRINT-LINE FROM IR-FR-11 AFTER 3.
      WRITE PRINT-LINE FROM IR-FR-12 AFTER 1.
      MOVE ACTUAL-DAYS-UNEMPLOYED TO IR-FR-I-A.
      WRITE PRINT-LINE FROM IR-FR-14 AFTER 2.
      MOVE GOAL-DAYS-UNEMPLOYED TO IR-FR-I-B.
      WRITE PRINT-LINE FROM IR-FR-16 AFTER 2.
      WRITE PRINT-LINE FROM IR-FR-18 AFTER 2.
      COMPUTE IR-FR-II-A = 30-HOURLY-WAGE-AT-PLACEMENT / 100.
      WRITE PRINT-LINE FROM IR-FR-20 AFTER 2.
      MOVE GOAL-HOURLY-WAGE TO IR-FR-II-B.
      WRITE PRINT-LINE FROM IR-FR-22 AFTER 2.
      IF REPORT-TYPE NOT = 2 GO TO PRINT-REST-OF-FINAL-REPORT.

      WRITE PRINT-LINE FROM IR-24 AFTER 2.
      MOVE INTERIM-ESTIMATE-DAYS-WORKED TO IR-III-A.
      WRITE PRINT-LINE FROM IR-26 AFTER 2.
      MOVE GOAL-DAYS-WORKED TO IR-III-B.
      WRITE PRINT-LINE FROM IR-28 AFTER 2.
      WRITE PRINT-LINE FROM IR-30 AFTER 2.
      MOVE INTERIM-EST-FIRST-YEAR-INCOME TO IR-IV-A.
      WRITE PRINT-LINE FROM IR-32 AFTER 2.
      WRITE PRINT-LINE FROM IR-33 AFTER 1.
      MOVE GOAL-FIRST-YEAR-INCOME TO IR-IV-B.
      WRITE PRINT-LINE FROM IR-35 AFTER 2.
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      WRITE PRINT-LINE FROM IR-37 AFTER 2.
      MOVE INTERIM-BENEFIT TO IR-V-A.
      WRITE PRINT-LINE FROM IR-39 AFTER 2.
      WRITE PRINT-LINE FROM IR-40 AFTER 1.
      WRITE PRINT-LINE FROM IR-41 AFTER 1.
      WRITE PRINT-LINE FROM IR-43 AFTER 2.
      WRITE PRINT-LINE FROM IR-45 AFTER 2.
      WRITE PRINT-LINE FROM IR-47 AFTER 2.
      MOVE INTERIM-PAYMENT-POINTS TO IR-V-C.
      WRITE PRINT-LINE FROM IR-49 AFTER 2.
      WRITE PRINT-LINE FROM IR-52 AFTER 3.
      WRITE PRINT-LINE FROM IR-53 AFTER 1.
      WRITE PRINT-LINE FROM IR-54 AFTER 1.
      MOVE 5 TO SPACING.
      GO TO PRINT-TRAILER.

PRINT-REST-OF-FINAL-REPORT.
      COMPUTE D = GOAL-DAYS-UNEMPLOYED - ACTUAL-DAYS-UNEMPLOYED.
      COMPUTE E = ACTUAL-FIRST-YEAR-INCOME -
        GOAL-FIRST-YEAR-INCOME.
      COMPUTE F = 8 * D * .01 * 30-HOURLY-WAGE-AT-PLACEMENT.
      COMPUTE TEMP = E + F + .9999.
      IF TEMP < 0 MOVE 0 TO FINAL-BENEFIT, ELSE MOVE TEMP TO
        FINAL-BENEFIT.
      COMPUTE TEMP = FINAL-BENEFIT - INTERIM-PAYMENT-POINTS.
      IF TEMP < 0 MOVE 0 TO FINAL-PAYMENT-POINTS, ELSE MOVE TEMP TO
        FINAL-PAYMENT-POINTS.
      WRITE PRINT-LINE FROM FR-24 AFTER 2.
      MOVE ACTUAL-FIRST-YEAR-INCOME TO FR-III-A.
      WRITE PRINT-LINE FROM FR-26 AFTER 2.
      MOVE GOAL-FIRST-YEAR-INCOME TO FR-III-B.
      WRITE PRINT-LINE FROM FR-28 AFTER 2.
      WRITE PRINT-LINE FROM FR-30 AFTER 2.
      MOVE FINAL-BENEFIT TO FR-IV-A.
      WRITE PRINT-LINE FROM FR-32 AFTER 2.
      WRITE PRINT-LINE FROM FR-33 AFTER 1.
      WRITE PRINT-LINE FROM FR-34 AFTER 1.
      WRITE PRINT-LINE FROM FR-36 AFTER 2.
      MOVE INTERIM-PAYMENT-POINTS TO FR-IV-B.
      WRITE PRINT-LINE FROM FR-38 AFTER 2.
      WRITE PRINT-LINE FROM FR-40 AFTER 2.
      MOVE FINAL-PAYMENT-POINTS TO FR-IV-C.
      WRITE PRINT-LINE FROM FR-42 AFTER 2.
      WRITE PRINT-LINE FROM FR-43 AFTER 1.
      MOVE 16 TO SPACING.

PRINT-TRAILER.
      IF REPORT-TYPE = 1 MOVE '2' TO HRD-JA-REPORT-NO,
         MOVE 'INITIAL GOALS REPORT' TO HRD-JA-REPORT-NAME.
      IF REPORT-TYPE = 2 MOVE '3' TO HRD-JA-REPORT-NO,
         MOVE 'INTERIM REPORT       ' TO HRD-JA-REPORT-NAME.
      IF REPORT-TYPE = 3 MOVE '4' TO HRD-JA-REPORT-NO,
         MOVE 'FINAL REPORT         ' TO HRD-JA-REPORT-NAME.
      WRITE PRINT-LINE FROM ALL-59 AFTER SPACING.
      GO TO READ-CARD.
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        DONE.
            CLOSE CARD.
            CLOSE LISTING.
            STOP RUN.

        INITIAL-GOALS-REGRESSION SECTION.
            COMPUTE DU-NB = DU-NB + DAYS-UNEMPLOYED-COEF (XR) *
              CLIENT-CHAR (XR).
            COMPUTE HW-NB = HW-NB + HOURLY-WAGE-COEF (XR) *
              CLIENT-CHAR (XR).
            COMPUTE DW-NB = DW-NB + DAYS-WORKED-COEF (XR) *
              CLIENT-CHAR (XR).

        INTERIM-EST-DAYS-WORKED-REGRES SECTION.
            COMPUTE IEDW = IEDW + I-E-DAYS-WORKED-COEF (XR) *
              CLIENT-CHAR (XR).

/*
//GO.SYSPRINT DD SYSOUT=A,DCB=(RECFM=FBA,LRECL=133,BLKSIZE=1330)
//GO.SYSIN DD *,DCB=BLKSIZE=80
1
JDOE        12345678910177212345611000110100026 71 352001953120
2
JDOE        12345678910177212345611000110100026 71 3520019531201113721205 0
3
JDOE        12345678910177212345611000110100026 71 3520019531201113721205 0 3360
/*
//
```

(THE ABOVE 6 INPUT CARDS ARE A TEST CASE)

Appendix D

CONSTRUCTION OF THE JOB AGENT PAY SCHEDULE UNDER THE INCENTIVE PAY SYSTEM

Table 1 in the text presents a proposed pay schedule developed by The Rand Corporation, with the help of HRD's personnel specialists. This appendix examines the criteria upon which the pay schedule is developed.

Several principles governed the development of the proposed pay schedule:

1. There must be a definite maximum incentive payment that a particular job agent can receive.
2. The pay schedule must provide for a minimum of two annual or "merit" pay step increases.
3. The step increases should each be five percent of the starting pay.
4. In order to provide an incentive, the pay schedule should allow a job agent to compete for an incentive payment up to 20 percent of base pay.

The generalized pay schedule, shown in Table D-1, meets these requirements. All entries on the schedule are expressed in terms of the minimum base pay. The table illustrates that the range of salary from Step 1, Class A to Step 3, Class E must be 30 percent of the minimum base salary.

The pay schedule presented in Table 1 is consistent with the generalized pay schedule. Moreover, it provides that the present minimum job agent salary of $884 per month can be maintained, job agents at the maximum will still earn around ten percent less than the maximum earned by supervisors, and all but 14 of the present job agents can compete for the full 20 percent maximum incentive payment.

Table D-1

TENTATIVE NEW MONTHLY SALARY RATES FOR JOB AGENTS

Annual Salary Step	Incentive Pay Class	A	B	C	D	E
	Incentive Rank	Bottom fifth	Second fifth	Third fifth	Fourth fifth	Top fifth
	Bonus as a Percent of Base Pay	0	5	10	15	20
1		X[a]	X + 5%	X + 10%	X + 15%	X + 20%
2		X + 5%	X + 10%	X + 15%	X + 20%	X + 25%
3		X + 10%	X + 15%	X + 20%	X + 25%	X + 30%

[a]X = minimum base monthly salary.